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Ontario Dept. of Highways  
Report  
1965/66-1967/68.















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Ont. Highways dept  
Report





# ANNUAL REPORT

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for the fiscal year ending  
March 31st

1965/1966 - 1967/68

Department of Highways

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ONTARIO



TO THE HONOURABLE W. EARL ROWE,  
*Lieutenant-Governor of the Province of Ontario.*

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to transmit the Annual Report of the Department of Highways, Ontario, for the fiscal year ending March 31, 1966.

Respectfully submitted,  
CHARLES S. MACNAUGHTON,  
*Minister of Highways.*

Parliament Buildings,  
Toronto, Ontario,  
December 3, 1966.





TO THE HONOURABLE CHARLES S. MACNAUGHTON,  
*Minister of Highways, Ontario.*

Sir:

I have the honour to present the report of the activities of the Department of Highways for the fiscal year ending March 31, 1966.

The report covers the operations of the ten Branches and includes special reports on the Trans-Canada Highway and the Mining, Access, Resources and Forestry Roads.

Respectfully submitted,

A. T. C. McNAB,  
*Deputy Minister.*

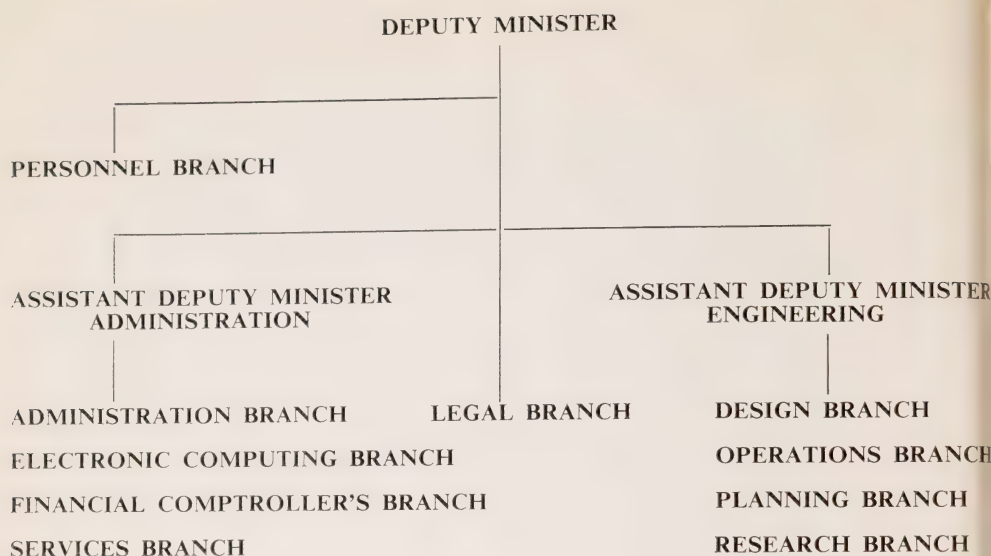
Downsview, Ontario,  
December 1, 1966.







Honourable Charles S. MacNaughton,  
Minister of Highways, Ontario



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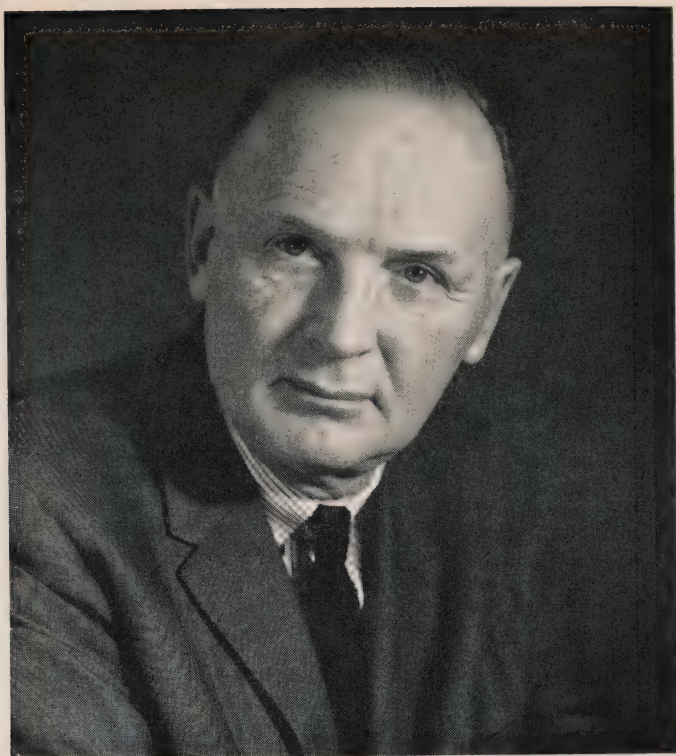
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A. T. C. McNab, Deputy Minister

## SUMMARY OF THE REPORT

With a record net budget of \$336,146,000 for the current fiscal year, the Department had either completed or had in progress a most substantial program of highway improvements before the end of the fiscal year.

In the \$336,146,000 budget there was provision of \$146,244,000 for construction and \$58,684,000 for maintenance on King's Highway mileage. The \$131,218,000, budgeted for assistance to the municipalities, mainly in the form of road subsidies, was also a new high.

A feature of the routine normal program of improving, and, where necessary, expanding the capacity of existing King's Highway mileage was the reconstruction to four lanes of some of the more heavily-travelled sections in Southern Ontario. New four-lane sections, totalling almost 30 miles, were completed at these points: on Highway 2 at Windsor, Trenton and Brockville; on Highway 3 at Fort Erie; Highway 8 at Stamford; on Highway 10 both northerly from Cooksville and northerly from Brampton; and on Highway 11, the widening to four lanes from Orillia northerly was extended as far as Severn River.

Initial work on a new controlled-access urban expressway for the cities of Port Arthur and Fort William—a project which will eventually provide a 32-mile high-speed route around and through the Lakehead—was begun at the end of August. Late



in October the department awarded the first contract for work on a similar expressway to serve Kitchener-Waterloo and the surrounding area, this work being preparatory to the awarding of the first major contract early in 1966.

These two expressways are the first of their type to be undertaken under a new cost-sharing arrangement in which the Department of Highways assumes 75 per cent of the cost of property purchases for right-of-way, construction and maintenance, the municipalities who are party to the special agreement covering each such expressway being required to pay only the remaining 25 per cent.

During 1965 work was under way on the Queen Elizabeth Way at several points. As part of the continuing program to widen to six lanes those sections carrying heavier traffic volumes, a start was made on the six miles westerly from the Mississauga Road. Farther west, reconstruction of a section in the vicinity of the Highway 25 interchange, including a substantial expansion and modification of the interchange itself, was completed.

Work was also in progress on two new interchanges, for the Vineland Sideroad and the Jordan Sideroad, the latter being almost completed at year's end. A major resurfacing contract was finished covering the south lanes over the 18-mile distance between Lundy's Lane, at Niagara Falls and Fort Erie.

On the Macdonald-Cartier Freeway, more than 30 miles of two additional lanes were placed in service on sections that previously had only two lanes. In Western Ontario, by mid-August, the new south lanes for eastbound traffic had been opened to traffic over the whole of the 20-mile section from east of Kent Centre, just east of Chatham, easterly to the Kent-Elgin County Line, representing the completion of four lanes throughout Western Ontario. Since the opening of these additional lanes last Summer there has been a minimum of four lanes on 401 all the way from Windsor to east of Gananoque, a distance of more than 400 miles.

In Eastern Ontario, two new lanes for westbound traffic over the 11 miles between Iroquois and Highway 16 were opened to traffic in October. Additionally, the work of grading the north lanes and erecting structures on the section from Iroquois easterly to the Aultsville Sideroad—the present western end of a four-lane section which extends from that point through to the Quebec border—was 90 per cent completed, the progress being such that a contract for a granular foundation course and concrete paving could be awarded.

Between Gananoque and Long Beach, west of Brockville—where a wholly new four-lane section of the Macdonald-Cartier Freeway is taking shape on a new alignment farther inland from the St. Lawrence River—grading contracts have been awarded to date for 16 miles of the total 25-mile distance.

Within Metro Toronto, the first section of Highway 401 to be widened to a basic pattern of 12 lanes—the six miles from Highway 400 easterly to Hogg's Hollow, just east of Avenue Road—was placed in service in mid-December. Work on widening other sections to 12 lanes was also in progress from Hogg's Hollow easterly to Victoria Park Avenue and, west of Highway 400, from Wendell Avenue to Kipling Avenue. At the year's end the next stage closest to completion was the extension of Highway 400 southeasterly to a new interchange connection with Jane Street which will be placed in service in 1966.

Following upon the decision by The St. Lawrence Seaway Authority to make an early start on twinning certain sections at the northern end of the Welland Canal, the

Department of Highways awarded in September the first major tunnel contract for work on the Thorold tunnel, the approaches and related work, the tender amount being \$14,197,777.

Also in the Niagara Peninsula, the department completed and placed in service in December the first stage of Ontario's newest freeway, Highway 406. When completed this multi-lane, divided freeway, with full control of access, will extend from the Queen Elizabeth Way, at St. Catharines, southerly to Welland, with a link to Port Colborne to follow. The initial section to be built, representing some four miles of new construction, and all within the limits of St. Catharines, runs from St. David Road on the south to Westchester Avenue, with a connecting arm to St. Paul Street (Highway 8) and Geneva Street, both of which provide convenient connections with the Queen Elizabeth Way.

On another comparatively new freeway, Highway 403, a two-mile extension within the City of Hamilton from a point south of the Desjardins Canal westerly to the Aberdeen Avenue interchange, was opened to traffic on July 9th. A design feature of the new section is the first tri-level interchange complex to be placed in operation by the department, located between King and Main Streets.

Work was also in progress over an additional two miles westerly to the Mohawk Road interchange, in the vicinity of Ancaster, which section will carry Highway 403 up the Niagara Escarpment.

Farther to the west, construction of another section of this same new freeway, known as the Brantford By-pass, was far advanced before the end of the year and it is expected that the by-pass,  $6\frac{1}{3}$  miles long, will be placed in service in the summer of 1966.

In the same area, good progress was made on construction of the first section of New Highway 24A, the route of which will follow a more direct alignment between Paris and Simcoe. Grading and drainage work over the seven miles from Highway 53 southerly to one mile south of Scotland was brought to a stage which should enable completion by the Summer of 1966, when paving will follow.

On October 15 the new Macdonald-Cartier bridge across the Ottawa River linking Ottawa and Hull was officially opened. The \$9½ million expenditure required for the main structure was shared equally by the Provinces of Ontario and Quebec and the Federal Government. Cost of the Ontario approaches, estimated at more than \$3 million, was borne by the Department of Highways.

An unusual feature of the Ontario approaches to the Macdonald-Cartier Bridge was the first application by the department of colored pavement for road demarcation purposes in the Ottawa area, and among the earliest anywhere. The paved shoulders between travelled lanes and concrete curb are distinguished by colored pavement which looks not unlike concrete.

An additional section of the Ottawa Queensway, from O'Connor Street easterly to Concord Street, was opened in November. The mileage involved was only slightly more than half a mile. However, a million-dollar bridge over the Rideau Canal was included, providing a much-needed second crossing of the canal at this point, all traffic previously having to converge on the nearby Pretoria Bridge. Construction cost of the new section is estimated at more than \$5,190,000, exclusive of property required for the right-of-way.

On Highway 17, between Ottawa and Arnprior, a new 10-mile section—known as the Carp By-pass—was officially opened on November 9. By following a more direct

route, the new highway cuts approximately four miles off the former mileage. Besides the saving in mileage, the new route represents a notable improvement in safety and driving ease. As part of a continuing program to improve Highway 17 in this general area, work was also under way on a further 6½ miles of Highway 17 from Antrim—at the northern end of the new section—northerly to the junction with Highway 29 just east of Arnprior. This work is scheduled for completion in August 1966.

One of the major projects in progress in 1965 was the multi-million-dollar Quinte Skyway bridge and related work on Highway 41. By the Fall steel girders had been placed in position atop a significant percentage of the supporting concrete piers that cross the Bay of Quinte at a point near Deseronto.

Turning to still another part of the Province, and indicative of how widely dispersed has been the total program of highway improvement in 1965, a new north-south highway to by-pass Sarnia was constructed.

This new section of King's Highway, 4½ miles long, extends easterly a short distance from the intersection of Churchill Road and Indian Road, at the city's eastern limits, and then turns directly north, crossing above the C.N.R. tracks on a new structure en route to the Modeland Road interchange, which serves as the connection for both Highway 402 and Highway 7. Total estimated cost for the finished job will be over \$1½ million.

While only one 24-foot pavement has been constructed, property acquisition and grading has been on the basis of providing for future expansion to a divided, multi-lane artery when traffic warrants. Upon completion of the present work, the new highway will be signed as Highway 40, at which time the former route of Highway 40 through the business section of Sarnia will be signed as Highway 40B.

On the main route of the Trans-Canada Highway, reconstruction and new construction was under way in 1965 over a total of some 60 miles at various points. Included in the program was work on a section of Highway 15 near Bells Corners, close to the western limits of Ottawa; by-passes for Madoc on Highway 7 and Beaverton on a new section of Highway 12; the resurfacing of 30 miles of Highway 103 between Waubaushe and the junction with Highway 69 at Footes Bay; an 11-mile section of Highway 17 beginning some 60 miles north of Sault Ste. Marie and extending northerly to Mica Bay on Lake Superior; mileage between English River and Ignace, west of the Lakehead; and, still farther west, from Kenora easterly.

In Northwestern Ontario the new 85-mile section of Highway 11 between Atikokan and Fort Frances was officially opened on June 28 by Prime Minister Robarts. A spectacular construction feature of the highway is the Noden Causeway across Rainy Lake. Before the end of the year approximately two-thirds of the work of paving this new section of Highway 11 from the Seine River easterly for 34 miles had been completed.

Elsewhere in Northwestern Ontario, there were several roads where major programs were much in evidence. On Highway 105, the north-south highway linking the Red Lake mining area with Trans-Canada Highway 17, work was in progress on five contracts covering more than 50 miles. The work included grading, structures, granular base and paving.

In the same general area, on Highway 72—linking Sioux Lookout with Trans-Canada Highway 17—reconstruction was proceeding along 26 miles.

The most notable Resource Roads Project was the new 80-mile section between Ignace, on Trans-Canada Highway 17, and Savant Lake, on Highway 599, opened



to traffic in November. This provides a through route between Ignace and the mining community of Pickle Crow.

The drive was continued to complete the extension of Highway 101 from Highway 129, south of Chapleau, westerly to Wawa, and thus to Trans-Canada Highway 17. Grading, drainage and granular base work over a total distance of some 37 miles was carried out under four contracts.

The Sudbury-Timmins highway route was likewise the scene of considerable activity on several different sections. Contracts for 40 miles of clearing were awarded, the greater part of this work having been completed before the end of the year. Four grading contracts, covering 31 miles, were also in progress and, in addition, paving of more than eight miles of a newly reconstructed section of Highway 144, in the vicinity of Cartier, was completed.

Work on another new road, from Smooth Rock Falls northerly to Fraserdale, a distance of 45 miles, was sufficiently advanced by the Fall to permit opening to traffic at that time. The new road provides access to several remote Ontario Hydro generating stations.

### CONTRACTS COMPLETED

During 1965-66 Capital Contracts were completed on 465 miles of grading, 486 miles of hot mix paving and 95 structures. Completed capital contracts totalled 315 and maintenance contracts totalled 148.

Some 286 capital contracts and 153 ordinary (maintenance) contracts were awarded in 1965-66. New capital work included 380 miles of grading, 327 miles of hot mix paving and 86 structures of various types.

	FISCAL YEAR ENDING	
	MARCH 31, 1966	MARCH 31, 1965
From capital payments on construction of King's Highways and Secondary Highways.....	\$151,820,144	\$132,768,373
Less: <i>Recoveries on</i>		
(1) Trans-Canada Highway		
(2) Ottawa-Queensway		
(3) Railway Bridges		
(4) City of Ottawa.....	5,575,712	6,316,241
Net capital payments on construction of King's Highways and Secondary Highways.....	\$146,244,402	\$126,452,132
Ordinary expenditures on King's Highways and Secondary Highways including maintenance and general operating expenses.....	\$ 58,683,894	\$ 53,611,723
Provincial subsidies on municipal roads and streets, development roads, roads in unincorporated townships and connecting links.....	\$131,218,510	\$118,972,272
TOTAL NET EXPENDITURES.....	\$336,146,806	\$299,036,127



## ADMINISTRATION BRANCH

### ENGINEERING AUDIT SECTION

**D. M. Hopper, Superintendent**

The function of the Engineering Audit Section is to ensure the accuracy of Progress Payments and to approve the final payment quantities on all Capital, Ordinary, Development Road and Connecting Link Contracts in the Province of Ontario. In addition to this, a random sampling is carried out on the make-up of pre-engineering estimates for contracts and other miscellaneous duties as required. The work consists basically of two phases, being the physical field survey on a random basis to evaluate the methods and measurements used for progress and final payment and a detailed check of the quantities submitted for the final payment estimate.

For operational purposes, the Engineering Audit Section is sub-divided into two specific groups; Field Audit, and Contract Checking.

#### FIELD AUDIT GROUP

Under the direction of the Field Audit Supervisor, there are five Regional Supervisors each having a staff consisting of the following: Assistant Regional Supervisor, two Field Survey Parties, Weighing Inspector and Office Draftsman.

The staff is augmented during the construction season by staff from the Contract Checking Group, and conversely, staff is made available from the Regions to the Contract Checking Group during the off-construction season.

The Field Survey crews conduct an on-site spot check survey of all Capital, Maintenance, Development Road, Connecting Link Contracts and on occasion By-law subsidy work, to ensure that the progress or final field payment measurements are up-to-date and representative of the work performed. They also perform spot-checks on pre-engineering work projects to ensure that the information used to compile pre-engineering estimates is adequate for the purpose.

The Weighing Inspector performs routine checks on all weighing procedures in operation on the aforementioned contracts.

The Regional Supervisor and his Assistant, periodically and on a random basis, review in varying degrees of detail the office records and calculations supporting progress and final quantity payments and Work Orders, and, when required, calculations involving claims.

In addition to the Regional Staff, the Field Audit Supervisor is responsible for the work of an estimating group at Downsview, whose function is to review in detail a random sampling of pre-engineering estimates to ensure that they adhere to present procedures, and a further sampling of final estimates, processed by the Contract Checking Group, to ensure that they have been properly checked in accordance with the procedures, terms and specifications pertinent to the various contracts.

The estimating group also performs miscellaneous functions with regard to claim calculations, force accounts, etc.

In the fiscal year ending March 31st, 1966, the Field Audit Staff conducted some 524 audits of Field Office records and 506 Field Survey Audits on King's Highway, Connecting Link and Development Road Contracts. In addition, a considerable



number of final estimates were checked and approved at the Regional Offices during the Winter of 1965-1966.

### CONTRACT CHECKING GROUP

The Contract Checking Supervisor has under his direction, four distinct sub-groups, reviewing all final payment estimates on the various contracts mentioned previously, and approving same for final payment or subsidy, as the case may be. The fifth group, consisting of draftsmen, using data supplied in the final estimates and from other sources, compile finished plans and profiles showing the "as constructed" data on the section of highway embodied in each contract.

In addition to certifying final payment quantities, the Checking Group outlines deficiencies in the records related to measurement and basis of payment, and are also instrumental in revising the standards of records of payment procedures to meet the changing needs of the contracts.

As pointed out previously, a number of people are transferred from the Contract Checking Group to the Regions during the construction season, and in the Winter season the Contract Checking Group is augmented by parties from the Region, to handle the heavy flow of final estimates during that particular time of the year.

The following is a summary of the various types of contracts processed by the Contract Checking Group during the past fiscal year, showing the number and value of contracts processed per District:

	CONSTRUCTION		MAINTENANCE		INVITATION BID		DEV.	CONN.
	No.	\$ VALUE	No.	\$ VALUE	No.	\$ VALUE	ROADS	LINKS
Chatham.....	16	3,587,162.25	7	197,429.16	2	68,440.59	4	—
London.....	17	2,531,075.69	7	255,169.86	3	32,632.74	2	—
Stratford.....	21	3,030,621.56	8	130,627.68	2	23,383.27	10	—
Hamilton.....	35	11,726,478.74	17	1,116,196.67	5	81,272.54	1	2
Owen Sound.....	10	767,294.76	11	274,518.91	1	6,466.05	6	—
Toronto.....	17	6,056,040.59	16	862,737.73	5	88,564.59	5	—
Port Hope.....	13	1,038,932.79	10	357,132.54	3	18,524.74	20	1
Kingston.....	27	10,458,840.31	10	439,819.70	3	8,710.25	14	1
Ottawa.....	19	4,997,723.08	9	591,053.90	5	83,772.23	18	—
Bancroft.....	18	3,023,520.40	6	135,727.62	—	—	9	—
Huntsville.....	14	1,268,407.78	6	128,951.33	1	15,764.92	—	—
North Bay.....	9	1,515,154.64	6	103,544.62	—	—	1	—
New Liskeard.....	18	2,559,034.44	9	132,550.58	1	21,469.69	1	—
Cochrane.....	7	2,374,052.97	5	86,849.42	—	—	—	—
Sudbury.....	11	2,566,323.72	8	258,812.80	—	—	—	—
S. S. Marie.....	10	1,931,547.33	4	86,230.34	—	—	1	—
Fort William.....	16	4,498,979.39	2	120,699.34	—	—	—	—
Kenora.....	11	5,694,884.61	—	—	—	—	—	—
TOTALS.....	289	69,626,075.05	141	5,277,872.20	31	449,001.61	92	4

A written report under covering letter of the Superintendent of Engineering Audit is forwarded to the various District Engineers, Section and Branch heads, regarding each field check or report of final estimates.

**INFORMATION SECTION****Robert G. Baigent, Information Officer**

During the past year the Information Section continued its effort to tell the story of the department through the various news media and trade magazines. Press releases and fact sheets were distributed announcing highway openings, contract awards, public meetings and various other aspects of the department's operation.

Assisting reporters and feature writers with material and background information for articles also played an important part in the function of the section.

The section is responsible for the initial distribution of the Official Ontario Road Map, the map of Northern Ontario and the Macdonald-Cartier Freeway (Highway 401) Strip Map.

Regular publications issued during the year were the Road Bulletin which lists highway construction throughout the province and is issued every two weeks during the summer months and the D.H.O. News, an employee magazine. The Information Section is also responsible for the editing and publishing of the department's Annual Report.

The distribution of the department's six films increased considerably and by the end of the year passed the 20 million viewer mark, this figure includes screenings at the recently opened Skyport Cinemas, in the United States and at Dorval.

## DESIGN BRANCH

**JOHN WALTER, P.Eng., Director of Design**

### CARTOGRAPHIC SECTION

**K. G. Gould, Supervisor**

New bases were completed for the lithographing of maps of the following counties at a scale of 4 miles to 1 inch:

- (a) Ontario, Peterborough, Victoria and Northumberland and Durham.
- (b) Brant, Elgin, Oxford, Norfolk and Middlesex.
- (c) Bruce and Grey.

New bases were completed for maps of the following counties at a scale of 4 miles to 1 inch:

- (a) Simcoe.
- (b) Prince Edward, Frontenac and Lennox and Addington.
- (c) Stormont, Dundas and Glengarry and Prescott and Russell.

A new base was completed of Prince Edward County at a scale of 1 mile to 1 inch.

New bases were commenced for a map of the County of Hastings at a scale of 4 miles to 1 inch.

An entire new series of maps were designed for the northern districts of Ontario at a scale of 2 miles to 1 inch. A layout map was prepared showing the area to be covered.

Preparation of new bases for maps of the following northern districts were commenced:

- (a) Nipissing (north lower portion)
- (b) Nipissing (north upper portion)
- (c) Sudbury (north west portion)
- (d) Sudbury (north east portion)
- (e) Sudbury (middle west portion)
- (f) Sudbury (middle east portion)
- (g) Sudbury (south west portion)
- (h) Sudbury (south east portion)
- (i) Timiskaming (west portion)
- (j) Timiskaming (east portion)
- (k) Algoma (south eastern portion)
- (l) Algoma (south western portion)
- (m) Algoma (middle eastern portion).

The 1966 Road Map bases were revised and completely redesigned. A new fold and method of indexing was introduced for which many favorable comments were received.

The Macdonald-Cartier Freeway Strip Map was redesigned in booklet form and new bases prepared for lithographing.

The base for the Roads to Recreation map was revised and brought up to date.

A map was prepared showing the desirable county road system of southern Ontario for the Municipal Roads branch.

Cronaflexes were revised of county and district maps for new highways, new county roads and municipal limits.

A map of Ontario was completed for the O.P.P. showing policing areas of the Province.

The leading map agencies in Canada and the United States were supplied with information in order to bring their road maps of Ontario up to date.

The maps of Southern and Northern Ontario were revised and brought up to date to a scale of 8 miles to 1 inch. All of the tracings of the Patrol Maps of the districts were revised and brought up to date.

Work was done on the following miscellaneous jobs:

- (1) Checking by-laws
- (2) Reviewing subdivisions plans
- (3) Revision of wall maps.

## ROAD DESIGN DIVISION

**D. W. Farren, P.Eng., Road Design Engineer**

**H. D. McMillan, P.Eng., Associate Road Design Engineer**

During the fiscal year, the Road Design Division completed the design for 304 projects covering a total of 900 miles—summarized as follows:

Grading and drainage.....	10.0 miles
Grading, drainage and granular base.....	143.7 miles
Grading, drainage, granular base and hot mix paving.....	255.8 miles
Grading, drainage, granular base and concrete paving.....	46.2 miles
Granular base and hot mix paving.....	174.9 miles
Granular base and concrete paving.....	16.7 miles
Hot mix paving and resurfacing.....	256.8 miles

In addition, designs were completed for 53 structure and 72 miscellaneous contracts.

Some of the more significant projects were:

- (a) Macdonald-Cartier Freeway—Toronto By-Pass and Gananoque to Brockville.
- (b) Ottawa Queensway
- (c) Trans-Canada Highway
- (d) Welland Canal Tunnels.

The Road Design Division is divided into six sectors viz., Central Region, North Western Region, Eastern Region, Northern Region, North West Region and Head Office. All designs are prepared in the regions with the Head Office function reserved for those operations which can be best served from a centralized location.

### CENTRAL REGION

This region is responsible for the design work in the Toronto, Hamilton and Port Hope Districts.

84 projects were designed during the fiscal year.

Grading, drainage, granular base and hot mix paving.....	60.0 miles
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Grading, drainage, granular base and concrete paving .....	8.5 miles
(Equivalent to 50.5 miles of 2 lane mileage)	
Granular base and hot mix paving .....	11.5 miles
Resurfacing .....	22.0 miles
Structure and approaches .....	19 projects
Tunnel construction .....	2 projects
Miscellaneous .....	25 projects

#### EASTERN REGION

This region consists of the Kingston, Ottawa and Bancroft Districts.

63 projects were designed as follows:

Grading, drainage and granular base .....	26.6 miles
Grading, drainage, granular base and hot mix paving .....	51.0 miles
Grading, drainage, granular base and concrete paving .....	16.7 miles
Grading and drainage .....	10.0 miles
Granular base and concrete paving .....	16.7 miles
Resurfacing .....	22.6 miles
Hot mix paving .....	47.3 miles
Structure and approaches .....	16 projects
Miscellaneous .....	17 projects

#### SOUTH WESTERN REGION

This region consists of the London, Chatham, Stratford and Owen Sound Districts.

71 projects were designed as follows:

Grading, drainage, granular base .....	12.6 miles
Grading, drainage, granular base and hot mix paving .....	62.7 miles
(Includes 2 projects of Kitchener-Waterloo Expressway)	
Grading, drainage, granular base and concrete paving .....	21.0 miles
Hot mix paving and resurfacing .....	86.8 miles
Structures and approaches .....	12 projects
Miscellaneous .....	13 projects

#### NORTHERN REGION

The Northern Region is responsible for Road Design work in Huntsville, North Bay, New Liskeard, Sudbury and part of Sault Ste. Marie Districts.

60 projects were designed as follows:

Grading, drainage and granular base .....	76.0 miles
Grading, drainage, granular base and hot mix paving .....	33.0 miles
Granular base and hot mix paving .....	98.8 miles
Resurfacing .....	65.5 miles
Structure and approaches .....	4 projects
Miscellaneous .....	9 projects

#### NORTH WEST REGION

This region consists of the following districts: Kenora, Fort William, Cochrane and part of Sault Ste. Marie.

26 projects were designed as follows:

Grading, drainage and granular base .....	28.5 miles
Grading, drainage, granular base and hot mix paving .....	49.1 miles
Granular base and hot mix paving .....	64.6 miles
Resurfacing .....	13.4 miles
Structure and approaches .....	2 projects
Miscellaneous .....	6 projects



## HEAD OFFICE

### DESIGN SERVICES SECTION

This section is comprised of the "Intersection Detail Design Group" and the "Geometric Design Group".

The "Intersection Detail Design Group" is responsible for the detail design, alignment and splining of all interchanges and channelizations. In the past year 21 interchanges and 61 channelizations have been completed.

The "Geometric Design Group" is responsible for the preparation of geometric layout plans, precise alignment traverses and co-ordinate control systems. During this year, the section supplied this data for two projects of the Toronto By-Pass Section of the Macdonald-Cartier Freeway.

### HEAD OFFICE—PROJECT DESIGN ENGINEERS' SECTION

This section is comprised of the Project Review Group, Standards Group and the Manuals and Procedures Group.

The "Project Review Group" is responsible for scrutinizing all projects submitted from the Regions for conformity to standards. They prepare each project for the "Head Office Review" where key Department personnel approve the designs.

The "Standards Group" prepares all standards—both regular and special. It is the responsibility of this group to keep our standards manual up-to-date.

The "Manuals and Procedures Engineer" is responsible for keeping manuals, particularly our Estimating Manuals abreast of technical advances in Road Design technology.

### DESIGN STUDIES SECTION

The "Design Studies Engineer" is responsible for liaison between the "Road Design Division" and the "Electrical Computing Branch". In addition, he conducts special studies of design requirements.

## BRIDGE DIVISION

### B. R. Davis, P.Eng., Bridge Engineer

In June, 1965 Mr. A. M. Toye, P.Eng., Bridge Engineer, retired after 34 years of service with the Department. Mr. Toye was Bridge Engineer from April 1956 until his retirement. Also in June 1965 the following appointments were made:

Mr. B. R. Davis, P.Eng., to Bridge Engineer

Mr. C. Grebski, P.Eng., to Bridge Design Engineer

Mr. B. S. Richardson, P.Eng., to Sr. Bridge Project Engineer.

In July 1965, Miss D. E. Wilson, Secretary to the Bridge Engineer, retired after holding this position since 1937. During this time Miss Wilson served under four Bridge Engineers, Mr. A. Sedgewick, Mr. H. N. Lamont, Mr. A. M. Toye and Mr. B. R. Davis. This position was later filled by Mrs. V. M. Kidd.

The activities of the Bridge Division are summarized under the following sections which form the Division:



## BRIDGE PLANNING SECTION

**S. McCombie, P.Eng., Bridge Planning Engineer**

During the year studies were made and reports were prepared for 300 proposed bridge sites on King's Highways. Complete data on 140 sites was prepared and submitted to the Bridge Design Section to be used for Design purposes. In addition, reports were prepared for 22 proposed Municipal bridges.

Complete hydrologic investigations were made on 186 sites on King's Highways and Municipal Roads, and office studies were carried out on an additional 113 projects.

In the North West Region inspection was started on the Township bridges at the request of the Municipal Councils. When complete this inspection will permit the townships to initiate a program of replacement based on structure condition.

During the year seven bridges were built by rural municipalities in the Kenora District with the assistance of the Regional Staff.

## BRIDGE DESIGN SECTION

**C. Grebski, P.Eng., Bridge Design Engineer**

Designs for 77 bridges were completed by the Bridge Design Section and 25 by consultants during the year. Many of these bridge designs are associated with the design of our multi-lane freeways such as the first stage of the Kitchener-Waterloo Expressway and proposed Queen Elizabeth Way and Highway 27 Interchange.

A preliminary design was prepared for a subway carrying two C.N.R. tracks in Trenton, and a preliminary design study of alternative schemes for the Highway 11 crossing of the Ontario Northland Railway in New Liskeard, where unfavorable sub soil conditions have raised a number of problems which are not likely to be resolved until the results of long term settlement studies are received late in 1966.

An extensive investigation was undertaken for a subway design carrying Highway 403 under the Toronto, Hamilton and Buffalo Railway in Hamilton. This structure will have two spans of approximately 75 feet each and provide for eight lines of track. The deck design of this structure is significantly important in as much as it is the first known design in Canada to use long span precast, pre-tensioned concrete box units to carry railway traffic and represents a marked departure from the traditional type of design usually used for railway subways. Preliminary estimates indicate anticipated costs to be very attractive compared to alternative designs of more traditional configuration.

A bridge design was completed for the Kaministiquia River Bridge on Highway 61. The 610 ft. long prestressed post-tensioned, cast-in-place concrete deck bridge will be the first major structure of this type to be built in Northern Ontario. The 30 ft. wide deck with two 3 ft. curbs on each side is supported by 7' - 6" deep girders integral with deck and spaced at 18' - 0" Cts. This continuous four span structure (135' - 170' - 170' - 135') will be built in two stages, so that the contractor in the Second Stage can utilize part of the form work used in the First Stage. The superstructure will be supported by three solid shaft piers utilizing locally produced hexagonal prestressed concrete piles driven to shale bedrock. The use of these piles marks a first for their use by the Department.

Urban type expressways, characterized by the widening of the Toronto By-pass

Section of the Macdonald-Cartier (401) Highway, require extensive use of concrete retaining walls to minimize the purchase of extremely high priced right-of-way. In order to reduce the design and draughting costs and to expedite their construction, a standard plan was prepared with future computerization and automation in mind. Some 2½ miles of retaining wall was prepared using this standard.

In cooperation with the Electronic Computing Branch twelve structure analysis and geometric programs were developed, two programs updated and 4 programs replaced, bringing the total of such programs in use to 40.

Plans were prepared for 264 concrete, timber, and metal culverts with an estimated value of \$2.7 million dollars, and 17 overhead sign bridges with an estimated value of \$100,000.

Negotiations were begun with the Province of Quebec and Public Works of Canada regarding a new bridge over the Ottawa River at Portage du Fort, and design studies are proceeding.

The Macdonald-Cartier Bridge crossing the Ottawa River, linking the cities of Ottawa and Hull, was opened in October 1965. The Province of Ontario contributed one-third of the \$9,500,000 cost of the bridge and contributed some three million to the Ottawa approaches, which includes three grade separations. Designs were completed for two tunnels under the Welland canal, and the contract for the one at Thorold was awarded in September 1965. Work within the canal banks can only be carried out when the canal is closed to navigation, a three-month period each winter. This tunnel is scheduled for completion in mid 1968.

Late in the year announcements by the Federal Government suggested that further tunnels would be required.

## **BRIDGE CONTROL SECTION**

**Mr. A. E. McKim, P.Eng., Bridge Control Engineer**

The Contract Engineer prepared 113 estimates and Special Provisions for structure contracts for a total estimated value of \$20,000,000. Not included is the contract award for the Thorold Tunnel with an estimated value of \$18,000,000.

The Materials Control Officer prepared 947 purchasing requests for materials to be supplied by the Department with a value of \$5,233,000. These requests covered a wide variety of materials including 20,200 tons of reinforcing steel, 214,249 lineal feet of piling, and 70,900 lineal feet of bridge handrail. Arrangements were also made to have these materials inspected by private companies specializing in this work.

The Bridge Drafting Group, in addition to its regular functions of structure quantity calculation, the preparation of various bridge, hydrology, and topographical drawings and bridge standards, and the "as constructed" revision of bridge drawings, embarked on a unique program of co-operation with District personnel in the preparation of Final Payment Quantity Estimates.

Due to a severe depletion of Section staff, arrangements were made through the Operations Branch for the loan of suitable available field staff who, with a minimum of training, assisted the Section in reducing a considerable backlog of urgently required structure quantities.

Although this program did not get under way until the fourth quarter of the year,

staff of six Districts produced quantities for twenty-four structures in that period.

A new, expanded and more versatile computer program for quantity calculation was developed and introduced in the latter part of the year to facilitate the work of the Quantities unit.

One aerial flight to the town of Frankford was made to obtain oblique photographs of a new structure site. A montage depicting the proposed structure was then prepared.

Two large scale models of structures in the Highway 27 - Highway 401 Complex were constructed in addition to the horizontally curved structure proposed for the site of the St. Vincent St. Interchange on Highway 400 at Barrie.

Six rendered, perspective drawings of proposed new structures were prepared upon request.

The Construction Liaison Group checked shop drawings and supervised the inspection of 18 contracts, comprising 20 steel structures, representing 10,025 tons of structural steel: the manufacture, shipping and erection of approximately 81 pre-stressed beam contracts, and assistance was given to district staff in site post tension work: 135 falsework design structures were checked and many of these were inspected at sites prior to placing any concrete. In addition, assistance was continued to the field staff on all phases of bridge construction.

#### **MUNICIPAL BRIDGE LIAISON SECTION**

**K. L. Kleinsteinber, P.Eng., Municipal Bridge Liaison Engineer**

The Municipal Bridge Liaison Section received plans for structures with spans ranging from 6 feet to over 600 feet. Sixty-seven field hydrology investigations were carried out and 114 bridge and culvert sites inspected in connection with pre-engineering, planning, construction and maintenance problems. Eight hundred and eighty-four sets of plans submitted by the municipal roads, municipalities, consultants and fabricators were processed. This total represents the review of 208 preliminary submissions and engineering reports. 339 sets of bridge drawings, 305 culverts and 32 maintenance buildings and bridge renovations.

#### **Summary of Bridge Construction**

During the calendar year 106 structures consisting of some 14,084 feet of bridging were completed.

A complete listing of these structures is given in Appendix 1.

Not included in this listing are 200 concrete culverts ranging in spans from 4 to 20 feet.

#### **ENGINEERING SURVEYS DIVISION**

**Y. Andersen, O.L.S., Superintendent**

The Engineering Surveys Division is responsible for all the field engineering survey work and plan preparation work for the Planning and Design Branches in all but the Northwestern Region. Other responsibilities, besides preparation work for current and future work projects, are: precise level (vertical control) surveys, ground control surveys (horizontal control) for photogrammetric plans, and standard surveys of



existing highways for the purpose of updating or preparation of new plans and profiles.

This year some 1,587 miles of surveys, 1,440 miles of plans, 84 bridge site plans, 52 railway crossing plans and other associated surveys and plans were completed. Approximately 62% of work was on work projects.

A summary of all work completed is as follows:

## HEAD OFFICE

Head Office Engineering Surveys is comprised of the following groups: Precise Level (vertical control) Surveys, Training, Head Office Drafting and the Strip Map Group.

### PRECISE LEVEL SURVEYS

The objective of precise leveling is to establish permanent and accurate bench marks by first order leveling along highways throughout the province to maintain a standard of indisputable accuracy. The level routes are scheduled whenever possible to meet forthcoming work projects as well as to cover geodetic bench mark gap areas. They are set in such a way that they will accommodate preliminary planning, design and still remain permanent after construction.

This year two complete field parties performed this work. During the summer an extra field party was in operation, complemented with summer students and five International exchange students—four from England and one from Sweden.

During the year a total of 309 precise level bench mark tablets were set with geodetic elevations, covering a distance of 268 miles. These were set along the following routes:

Highways 4 and 9	Flesherton to Wingham
Highways 7 and 8	Kitchener to Stratford
Highway 14	Belleville to Marmora
Highways 28 and 7	Port Hope to Peterborough East limits
Highway 37	Belleville to Actinolite
Highway 73	Aylmer to Hwy. 401
Highway 74	New Sarum to Hwy. 401
Highway 85	Kitchener to Elmira
Highway 401	Hwy. 73 to Wellington Rd. (London)
Highway 401	Belleville to Napanee
Highway 503	Kirkfield Lift Lock area
St. Thomas By-Pass	New Sarum through Talbotville Royal to Hwy. 401

One more frost test site was established in the Strathburn patrol yard (District No. 2) bringing the total to six. Elevations were taken 3 times during the year at all six sites. These frost tests are to determine the effects of frost action on eleven pipe-type bench marks set at various depths and in several soil conditions in each test area.

Copies of the result of precise level surveys (bench mark elevations and descriptions) are distributed to the District and Regional Offices, Department of Mines and Technical Surveys, Ottawa; Department of Public Works, Department of Energy and Resources Management and some Municipal Engineering Offices.

In the latter part of the year horizontal control equipment was purchased (Geodimeter and related instruments). Two men have been training with Land Surveys in the operation and recording of this equipment. This Division should be operating a horizontal control party by the end of next year.

## TRAINING

During the year a total of 89 candidates attended the following courses:

- Jr. Draftsman to Draftsman 1—Course with examinations.
- Tech. 2, Surveys to Tech. 3—Surveys Course with examinations.
- Tech. 3, Surveys to Tech. 1—Eng. Surveys Course with examinations.
- Tech. 1, Surveys to Tech. 2, Surveys—examinations only.
- Jr. Draftsman to Draftsman 1—Supplementary examinations.

## HEAD OFFICE—DRAFTING GROUP

During the year the Referencing Group's work and staff was amalgamated with the Head Office Drafting Group.

The Head Office Drafting Group completed 83 miles of plans, 3 bridge site plans and 1 railway board plan, which work was the Regional overload in District Nos. 7, 8, 9, 11, 13, 14 and 17.

Existing highway plans were kept up to date by the addition of 3,087 land plans, deeds, property sales, registered sub-divisions, annexations and property requests.

A total of 150 plans of all types were numbered and cross-referenced.

Highway number changes involved updating 81 plans and profiles.

Numerous additions sent in by Districts Nos. 1, 2, 3, 5, 6, 7, 8 and 11 for updating plans per circular 60-104 were plotted and traced.

A total of 27 profiles were updated by the addition of approved grades and 18 profiles were updated due to contract grade revisions.

## STRIP PLAN GROUP

The Engineering Surveys Division now has on file a strip plan for 153 highways, 164 secondary highways, 7 tertiary roads as well as special strip plans for the Kitchener-Waterloo Expressway and the Lakehead Expressway bringing the total to 326. These strip plans are a visual index for all highway plans, profiles, work projects and contracts on a particular highway.

Highway strip plans were prepared for 7 new highways, 240 strip plans were revised and 23 strip plans were retraced.

Prints of strip plans are supplied on a regular basis to 56 offices throughout the department. During the year 8,400 prints were issued due to numerous additions warranting the reissuing of strip plans.

In addition to the above, various miscellaneous charts, graphs and floor plans were produced.

A complete set of militia maps, lands and forest maps, D.H.O. county maps, etc. are maintained by this group. New and replacement maps are ordered and sent to our various offices. A militia map index overlay suitable for mounting on our road map is maintained and updated periodically. Copies are available on request.



SOUTHWESTERN REGION

	PLAN	SURVEY	BRIDGE SITES		RAILWAY CROSSINGS	
	MILEAGE	MILEAGE	PLANS	SURVEYS	PLANS	SURVEYS
Dist. No. 1.....	58.4	101.2	12	8	6	—
Dist. No. 2.....	80.1	102.1	5	13	9	3
Dist. No. 3.....	54.4	71.6	2	4	3	—
Dist. No. 5.....	65.2	115.7	3	4	5	2
Dist. No. 9.....	9.5	—	—	—	—	—
Dist. No. 11.....	25.5	25.6	—	—	—	2
Dist. No. 14.....	7.4	—	1	—	—	—
TOTALS.....	300.5	416.2	23	29	23	7

In addition to above:

- 9.8 miles of miscellaneous plans were prepared
- 42.0 miles of original cross sections were taken
- 75.2 miles of preliminary cross sections were taken
- 52.8 miles of resurfacing cross sections were taken
- 18 patrol yard plans were prepared and 27 patrol yard surveys were taken
- 1 service centre survey was carried out
- 9 miles of photo control were set
- 3 railway site surveys were taken for program inventory
- 26.1 miles of staking for soils were set
- 80.5 miles of photo plan field checking were carried out.

Numerous additions were sent in by District Nos. 1, 2, 3 and 5 for updating plans per Circular 60-104. Plans were also updated by numerous additions of new land plan information, registered sub-divisions, property request and boundary changes. This work accounted for 7% of the drafting staff this year.

This Region also assisted the Eastern and Northern Regions by doing the survey work and plan preparation for three projects.

CENTRAL REGION

	PLAN	SURVEY	BRIDGE SITES		RAILWAY CROSSINGS	
	MILEAGE	MILEAGE	PLANS	SURVEYS	PLANS	SURVEYS
Dist. No. 4.....	138.1	159.3	7	17	2	1
Dist. No. 6.....	131.3	106.6	4	4	4	2
Dist. No. 7.....	114.8	149.5	4	3	1	2
Dist. No. 11.....	21.7	39.0	—	—	—	1
Dist. No. 17.....	16.7	—	—	—	1	—
TOTALS.....	422.6	454.4	15	24	8	6

In addition to above:

- 54.0 miles of miscellaneous surveys were carried out
- 22.3 miles of original cross sections were taken
- 78.7 miles of preliminary cross sections were taken
- 6 patrol yard plans were prepared and 7 patrol yard surveys were taken
- 94.0 miles of photo control were set
- 37 railway site surveys were taken for program inventory
- 65.0 miles of staking for soils were set
- 17.0 miles of photo plan field checking were carried out
- 2 Energy Board plans were prepared and 3 Energy Board surveys were taken
- 5 commuter station plans were prepared and 7 commuter station surveys were taken.

This region also assisted the Northern Region by doing the survey work and plan preparation for two projects.

#### EASTERN REGION

	PLAN MILEAGE	SURVEY MILEAGE	BRIDGE SITES		RAILWAY CROSSINGS	
			PLANS	SURVEYS	PLANS	SURVEYS
Dist. No. 8.....	99.1	86.7	5	4	1	3
Dist. No. 9.....	74.0	89.6	5	7	2	2
Dist. No. 10.....	93.6	85.5	2	3	1	-
TOTALS.....	266.7	261.8	12	14	4	5

In addition to above:

40.0 miles of miscellaneous plans were prepared  
 29.0 miles of miscellaneous surveys were carried out  
 17.6 miles of original cross sections were taken  
 55.9 miles of preliminary cross sections were taken  
 20 patrol yard plans were prepared and 16 patrol yard surveys were taken  
 2 service center plans were prepared and 5 service centre surveys were taken  
 55 railway site surveys were taken for program inventory  
 121 miles of photo plan field checking were carried out  
 6 Energy Board surveys were taken and 6 Energy Board plans prepared  
 9 structure site surveys were taken for program inventory.

#### NORTHERN REGION

	PLAN MILEAGE	SURVEY MILEAGE	BRIDGE SITES		RAILWAY CROSSING	
			PLANS	SURVEYS	PLANS	SURVEYS
Dist. No. 11.....	76.2	79.1	8	3	1	1
Dist. No. 13.....	77.6	76.4	9	5	6	5
Dist. No. 14.....	46.2	93.2	6	5	—	2
Dist. No. 16.....	—	0.6	—	—	—	—
Dist. No. 17.....	117.0	110.5	11	4	10	3
TOTALS.....	317.0	359.8	34	17	17	11

In addition to above:

11.6 miles of miscellaneous surveys were carried out  
 41.3 miles of original cross sections were taken  
 98.0 miles of preliminary cross sections were taken  
 75.8 miles of resurfacing cross sections were taken  
 6 patrol yard plans were prepared and 4 patrol yard surveys were taken  
 57.6 miles of photo control were set  
 22 railway site surveys were taken for program inventory  
 3 Energy Board plans were prepared and 4 Energy Board surveys were taken.

#### PHOTOGRAMMETRY DIVISION

M. H. MacLeod, P.Eng., Photogrammetric Engineer

This Division in its roll of photogrammetrically supplying the basic engineering needs for the Planning, Design and Construction Engineers has found an ever increasing demand for services in all fields. It has reached proportions where mapping consultants and private agencies handled 40% of the mapping and reproduction requests, with a decided increase in overtime within the Division.

As may be seen by the following figures, production has increased to a great extent and as new methods and techniques are developed and used an even greater work flow is expected.

As part of a Regionalization Program, the first Regional Photogrammetrist was established in the Northern Region. As part of internal expansion, the Stereoplotting Group moved to larger quarters.

The current year ended with the purchase of another Kelsh Stereoplotting, bringing the total to five, and the purchase of a co-ordinatograph arm to be used in conjunction with the Kelsh for aerial triangulation procedures.

## INTERPRETATION AND STUDIES SECTION

During the fiscal year this Section projected some 258 miles of new highway location or revisions to existing high ways on aerial photographs covering eleven projects.

A total of 1,576 square miles of photographic interpretation was carried out to complete 58 Drainage Studies. A total of 1,969 square miles of interpretation was carried out to complete 39 Hydrology Studies. In all, 5,840 square miles of photo investigation was carried out to complete these projects.

This section, through the Study Plan and Mosaic group produced a total of 64 semi-controlled mosaics at scales ranging from  $200' = 1''$  to  $2,640' = 1''$ , covering a total of 21,278 square miles.

For Functional Planning Report purposes, many of these mosaics were photographically reproduced on a mylar base for reproduction purposes; 1 project at  $100' = 1''$  covering 60 sq. miles. 20 projects at  $400' = 1''$  covering 1,047 sq. miles and 4 projects at  $200' = 1''$  for a total of 7.1 sq. miles.

## STUDY PLAN AND MOSAIC GROUP

This year, by use of the multiplex or rectified enlarged photography, 11 new  $400' = 1''$  study plans were produced between Toronto and the Quebec boundary, covering an area of 284,470 acres. Four plans were revised covering an area of 45,718 acres.

One new plan was produced at the scale of  $1,320' = 1''$  covering 340 sq. miles and a total of 6 plans were revised covering an area of 3,240 sq. miles.

Large scale mapping at the scale of  $40' = 1''$  claimed a large portion of productive time this year. Twenty-six plans were produced by stereoplotter, contoured to a 2' interval and draughted, covering 5,898 acres. By photogrammetric method 10.7 miles of cross-sections were produced in 25' and 50' increments. These plans and cross-sections are used for design and construction purposes.

In a combined effort, 9 plans were produced from rectified, enlarged aerial negatives at the scale of  $100' = 1''$  covering 12,870 acres along the King's Highway 401.

During this year for stereoplotting purposes, 676 Kelsh plates were ordered and a total of 21,365 aerial prints. These were used to replenish Regional and Head Office Libraries and for mosaic purposes. Approximately 1,000 prints were drawn from the files and discarded when replaced by later date photography.

## ELECTRONIC COMPUTING BRANCH

A. E. Goodwin, B.A., P.Eng., Director

The purpose of the branch is to provide programming, systems and data processing services to all branches of the department in their diversified engineering, accounting, statistical, and/or management responsibilities. Consultation is also extended to other departments of the government and during the past year official recognition was given to the Branch as the engineering and scientific computer installation for the Government.

Significant new projects for computer applications and modifications to existing programs which resulted in more rapid processing services were undertaken by this Branch for the Department during the fiscal year 1965-66.

### DESIGN BRANCH

Bridge Design and Analysis Program Package (which now includes 33 programs)  
Interchange Design Program  
Road Design Programs Package (which now includes 5 programs)  
Two Dimensional Photogrammetry Transformation Program  
Three Dimensional Photogrammetry Transformation Program

### FINANCIAL COMPTROLLER BRANCH

Public Accounts Publication Program  
Expense Class Revision Programs  
Canada Pension Calculation Program

### OPERATIONS BRANCH

Highway Maintenance Costs Model  
Original Ground Elevation Graph Plotting Program  
Slope Stability, Stress, and Settlement Analysis Program Package (which now includes 6 programs)  
Mathematical Model for County Roads and Bridges Subsidy Studies  
Highway Lighting Distribution Study  
Concrete Quantity Control Program

### PLANNING BRANCH

Transportation Studies Program Package (which now includes 15 programs)  
Traffic Counts Hourly Volume Program  
Origin-Destination Survey System (Modification)  
Multi-Path Assignment Program—Modification  
Integrated Statistical Files—Highway Construction Program  
Traffic Design Hour Volume Study

### RESEARCH BRANCH

Auto Body Steel Corrosion Study—Analysis of Variance Program—Corrosion Means Program  
Pavement Experiment—Basic Statistical Analysis Program  
Factor Analysis of Recreational Travel  
Bridge Classification Study

### SERVICES BRANCH

Equipment Budget Justification Program  
Equipment Maintenance Cost Control Program—Modification  
Tellurometer Reduction Program



Geodimeter Reduction Program  
Office Services Inventory System  
Land Surveys Balancing Program

MANAGEMENT

Selective Dissemination of Information Study—Technical Information Library  
Employee Skills Matching Program—Engineers  
Highway Pre-Contract Engineering Work Pattern Study

Significant projects undertaken at the request of other departments during the fiscal year 1965-66 on a programming, systems, or consultation basis are:

DEPARTMENT OF CIVIL SERVICE

Pay Research Data Analysis 1963-1964  
Training Needs Survey Analysis—continued

DEPARTMENT OF HEALTH

Computer System Evaluation Study for OMSIP

WATER RESOURCES MANAGEMENT

Statistical Analysis of Fish Population  
Sewage Plant Staff Salary Evaluation Program

DEPARTMENT OF LANDS AND FORESTS

Timber Scaling and Invoice Programs  
Cottage Owner Survey Programs  
Provincial Park Day Visitors Survey

DEPARTMENT OF MUNICIPAL AFFAIRS

Planning Board Survey Analysis  
Committee of Adjustment Survey Analysis

ONTARIO PROVINCIAL POLICE

Clothing Issue Reports

The following list represents significant applications in production.

JOB DESCRIPTION	NO. OF MILES	NO. OF JOBS
Road Elevation & Alignment.....	1,572	174
Land Survey Calculations.....		480
Critical Path Reports With Updating.....		623
Earth and Rock Quantity Calculations—Payment.....	171	28
Slope Stability Design.....		119
Bridge Calculations—All Types.....		1,897
Monthly Progress Payment Certificates.....		82
Area Transportation Studies.....		26
O-D Surveys.....		17
Hourly Traffic Counts.....		250
Accounts.....		4,155
Personnel.....		615

The Electronic Computing Branch has in its installation sophisticated computer equipment to develop and process engineering, scientific, and accounting application consisting of:

- an IBM 7040 System (to be replaced by a 7044 System in July, 1966)
- an IBM 1401 2 Tape System which was replaced by an IBM 1460 System in March, 1966.



## FINANCIAL COMPTROLLER'S BRANCH

J. G. McMILLEN, C.A., Comptroller

The following statements outline the expenditure and cash receipts of the Department of Highways, Ontario, for the year ended March 31, 1966.

- I. Ordinary Expenditure
- II. Capital Payments, including Expenditure Summary
- III. Trans-Canada Highway
- IV. The "Queensway"—Ottawa
- V. Receipts
- VI. Comparison of Average Unit Prices Paid on Contracts
- VII. Burlington Bay Skyway
- VIII. Garden City Skyway

### TOTAL EXPENDITURES

The "Expenditure Summary" (Statement II) sets out total ordinary expenditure and capital payments at \$336,146,806. The following is a comparison of total expenditure with previous years.

1961.....	\$237,994,017	1964.....	\$280,476,989
1962.....	243,238,200	1965.....	299,036,127
1963.....	251,152,745	1966.....	336,146,806

### TRANS-CANADA HIGHWAY AGREEMENT

Expenditure of the Department under this agreement is shown in Statement III in the amount of.....\$222,834,485

with funds recovered or recoverable of.....115,169,593

and a net cost to the Department of.....\$107,664,892

### RECOVERABLE EXPENDITURE

Within the fiscal year, the Department recovered \$17,259,952 made up as follows:

Trans-Canada Highway.....	\$ 2,536,827
Ottawa Queensway Government of Canada.....	\$ 483,000
City of Ottawa.....	1,733,000
Railway Bridges.....	1,305,885
Total of items detailed in Statement II.....	\$ 5,575,712
Federal-Provincial Resources Roads.....	750,000
Ontario Department of Mines.....	1,326,655
Sundry items credited to expenditure or to revenue.....	9,607,585
	<u>\$17,259,952</u>

### PRE-QUALIFICATION OF CONTRACTORS

There were 286 capital contracts awarded during the year, of which 215, representing 75.2% of the total and 98.5% of the tender value, required the pre-qualification of contractors. Of the 153 ordinary contracts awarded during the year 82 or 53.6%

representing 81.7% of the tender value, required pre-qualification. An average of 4.1 bids was received on pre-qualified contracts as compared with 3.4 bids on un-qualified contracts.

INDICES OF TENDER PRICES PAID ON ROAD CONTRACT AND FOR MATERIALS

To illustrate the trend of prices paid this year in relation to previous years, the following charts are submitted showing:

- Index of Tender Prices Paid on Road Contracts (Charts I - II)
- Index of Tender and Material Prices (Chart III)

It is evident from these indices that unit prices for the majority of tender items showed a substantial increase, and prices paid for road materials rose slightly during the year.

BURLINGTON BAY SKYWAY AND GARDEN CITY SKYWAY

The accompanying statements indicate a continued upward trend in revenue and in the number of vehicles using the Skyways.

CHART I  
INDICES OF TENDER PRICES PAID ON ROAD CONTRACTS

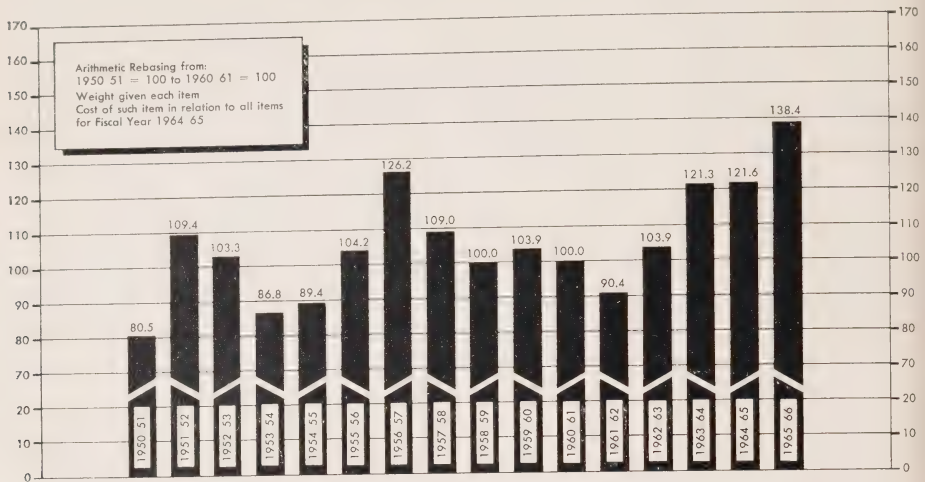


CHART II  
TENDER PRICE INDICES

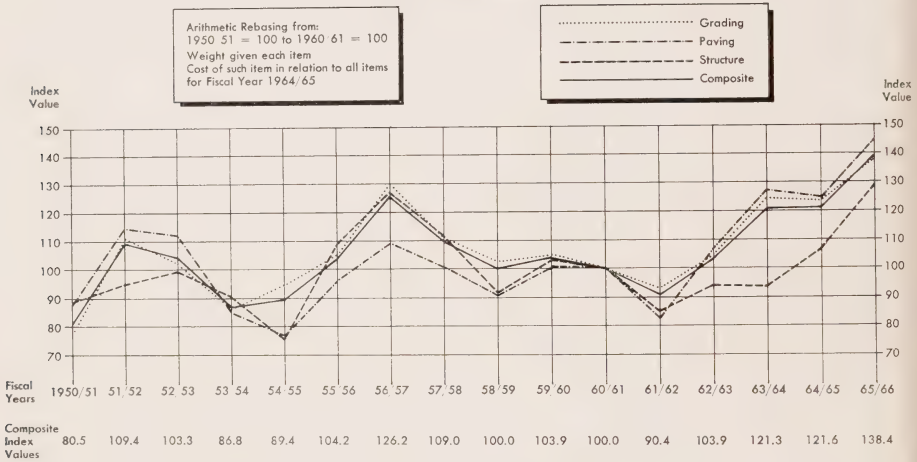
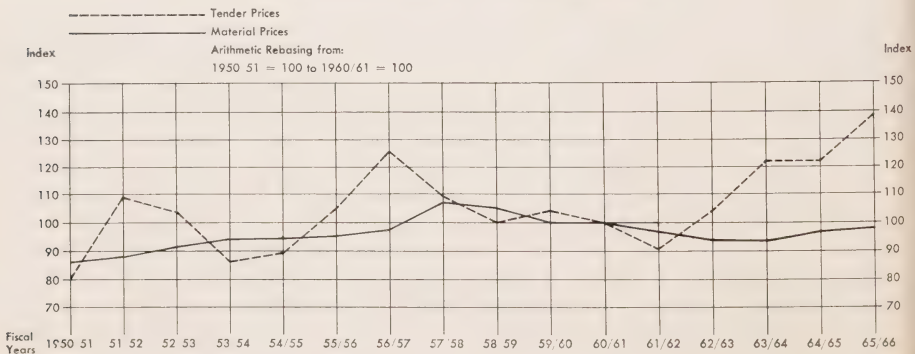


CHART III  
COMPARISON OF TENDER AND MATERIAL PRICE INDICES



**STATEMENT I**  
**Ordinary Expenditure**  
**For the Fiscal Years ending March 31, 1966 and March 31, 1965**

	YEAR ENDING MARCH 31, 1966	YEAR ENDING MARCH 31, 1965
Maintenance of King's Highways and Secondary Highways—		
Winter Maintenance—		
Contract and day labour.....	\$20,181,609	\$18,923,555
Equipment Operating costs due to standby (60%).....	136,159	295,719
Summer Maintenance—		
Patrol costs.....	11,597,016	10,461,186
Gravel crushing, contract and day labour.....	857,652	541,556
Prime contract and day labour.....	498,668	736,100
Hot mix Patching, contract and day labour.....	1,301,978	1,237,135
Surface treatment, Contract and day labour.....	386,026	338,007
Mulch, day labour.....	117,966	94,601
Major bridge repairs.....	422,959	370,776
Equipment operating costs due to standby (40%).....	90,776	197,146
Operation c. terraces.....	724,292	487,073
Flood and other emergencies.....	21,150	217,933
District office overheads, including engineering warehouse and municipal.....	8,437,843	8,108,709
Expenditures recovered but credited to revenue.....	266,668	252,276
Increase (decrease) in inventories.....	164,665	(131,609)
	\$45,205,427	\$42,130,163
Repaving of present roads.....	1,665,560	1,156,901
Maintenance of development roads.....	73,216	86,761
Maintenance of roads in Unincorporated Townships in Northern Ontario.....	719,439	619,569
Building repairs.....	358,976	226,347
Total (see Appendices 2 and 3 for distribution of above expenditures by counties, roads, etc.).....	\$48,022,618	\$44,219,741
General Operating Expenditures—		
Purchase of new trucks, tractors, graders, plows and other road equipment.....	\$ 2,460,408	\$ 2,006,534
Printing and stationery.....	1,015,146	1,001,318
Office furniture and equipment.....	347,527	342,649
Workmen's compensation.....	263,697	229,335
Insurance and claims.....	248,801	258,181
Unemployment insurance stamps.....	161,853	185,130
Maintenance of buildings and area office rentals.....	159,831	140,522
Teletype rentals.....	81,680	86,390
Staff training.....	60,628	103,360
Recoverable expenditure (net).....	11,648	(3,958)
Central stores, increase in stock.....	34,971	16,444
	\$ 4,846,190	\$ 4,365,905
Head Office—		
General administrative and operating staff salaries.....	\$ 4,904,847	\$ 4,499,295
Travelling expenses.....	286,407	267,329
Electronic section salaries and equipment rentals.....	139,387	180,011
Sundry.....	966,800	566,580
	\$ 6,297,441	\$ 5,513,215



## STATEMENT 1 (Cont'd)

Road publicity, etc.....		149,943		147,654
Burlington Bay Skyway, toll collection costs.....	248,530		210,737	
Garden City Skyway, toll collection costs.....	165,159		162,125	
		\$ 413,689		\$ 372,862
Commuter Rail Project.....		137,130		—
Municipal Subsidies—				
County roads.....	\$ 6,632,233		\$ 6,184,380	
Township roads.....	16,700,455		15,405,063	
Cities, towns and villages.....	14,367,889		12,329,309	
		\$37,700,577		\$33,918,752
TOTAL ORDINARY EXPENDITURES.....		\$97,567,588		\$88,538,129

## Per Public Accounts

Total Ordinary Expenditures per Public accounts.....	\$97,567,588	\$88,538,129
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## STATEMENT II

## Capital Payments

For the Fiscal Years Ending March 31, 1966 and March 31, 1965

	YEAR ENDING MARCH 31, 1966	YEAR ENDING MARCH 31, 1965
Construction of King's Highways and Secondary Highways—		
Payments to contractors.....	\$ 80,997,541	\$ 66,137,273
Materials and sundry contract expenditures.....	37,287,043	33,340,877
Engineering.....	13,212,637	10,179,627
	\$131,497,221	\$109,657,777
Construction of Development Roads.....	16,999,562	14,368,227
Construction of roads in Unincorporated Townships in Northern Ontario.....	440,246	582,562
Expenditures allocated to the above roads—		
Property purchase.....	\$ 12,248,123	\$ 7,459,670
Land Surveys.....	1,881,876	1,877,764
Planning.....	1,239,166	923,937
Design.....	5,778,107	5,211,299
Buildings.....	1,221,334	245,825
	\$ 22,368,606	\$ 15,718,495
Total (see Appendices 1 and 2 for distribution of above expenditure by counties, roads, etc.).....	\$171,305,635	\$140,327,061
Expenditures of Head Office branches unallocated and not included above:		
Right of Way Division.....	\$ 1,083,010	\$ 1,849,683
Land Surveys.....	1,669,186	914,841
Planning.....	2,892,834	2,852,918
Design.....	1,938,452	1,660,113
Buildings.....	26,365	22,385
Soils Materials and Testing.....	3,028,236	2,875,726
Engineering Audit.....	723,948	733,364
Increase (decrease) in Bailey Bridges and steel inventories.....	173,415	(26,222)
Net recoverable expenditures debit, (credit).....	(4,803,768)	1,357,713
Electronic Section, salaries and equipment—rentals.....	800,568	687,401
Sundry.....	346,186	162,716
	\$ 7,878,432	\$ 13,090,638

## STATEMENT II (Cont'd)

Commuter Rail Project.....	30,987		
Municipal Subsidies:			
County roads.....	\$ 16,629,164	\$ 14,177,393	
Township roads.....	16,757,734	15,839,442	
Cities, towns and villages.....	31,552,978	33,379,705	
	<u>\$ 64,939,876</u>	<u></u>	<u>\$ 63,396,540</u>
TOTAL GROSS CAPITAL PAYMENTS			
ON CONSTRUCTION.....	\$244,154,930		\$216,814,239
Less Recoveries:			
Trans-Canada Highway.....	\$ 2,536,827	\$ 2,617,937	
Ottawa Queensway—			
Government of Canada.....	483,000	1,071,872	
City of Ottawa.....	1,250,000	750,000	
Railway Bridges.....	1,305,885	1,876,432	
	<u>\$ 5,575,712</u>	<u></u>	<u>\$ 6,316,241</u>
NET CAPITAL PAYMENTS PER PUBLIC			
ACCOUNTS.....	\$238,579,218		\$210,497,998
	<u></u>	<u></u>	<u></u>
EXPENDITURE SUMMARY			
Ordinary expenditures.....	\$ 97,567,588	\$ 88,538,129	
Capital payments, net.....	\$238,579,218	\$210,497,998	
	<u>\$336,146,806</u>	<u></u>	<u>\$299,036,127</u>
TOTALS.....	<u>\$336,146,806</u>	<u></u>	<u>\$299,036,127</u>

STATEMENT III  
Trans-Canada Highways

The following statement sets out expenditure and amounts recoverable on the Trans-Canada Highway from the inception of the agreement with the Government of Canada on April 24, 1950.

	REFUNDABLE BY GOVERNMENT OF CANADA	EXPENDED BY DEPARTMENT
Refunded by the Government of Canada on account of work performed prior to April 24, 1950.....	\$ 1,569,640	\$.....
Year ending March 31, 1951.....	2,749,329	7,043,559
" " " 1952.....	3,453,866	8,242,801
" " " 1953.....	4,103,753	11,746,130
" " " 1954.....	2,486,860	9,686,452
" " " 1955.....	6,274,487	5,675,343
" " " 1956.....	3,365,959	9,602,299
" " " 1957.....	4,855,053	13,996,280
" " " 1958.....	12,381,361	20,683,306
" " " 1959.....	15,803,757	27,995,777
" " " 1960.....	17,662,423	28,412,552
" " " 1961.....	16,500,840	24,786,757
" " " 1962.....	11,623,549	16,168,477
" " " 1963.....	3,958,997	8,164,528
" " " 1964.....	2,990,783	6,784,073
" " " 1965.....	2,617,937	5,591,696
" " " 1966.....	2,536,827	6,432,938
Expenditure by Department for property and other non-recoverable expenditures.....		11,821,517
TOTAL TO MARCH 13, 1966.....	\$114,935,421	\$222,834,485
Further claims to be submitted based on expenditures to		
March 31, 1966 Claim No. 154.....	184,672	
Claim No. 155.....	49,500	
TOTAL REFUNDS BY GOVERNMENT OF CANADA.....	<u></u>	<u>\$115,169,593</u>
NET ESTIMATED COST TO MARCH 31, 1966.....		<u>\$107,664,892</u>

### STATEMENT IV The Queensway-Ottawa

The following statement sets out expenditures and amounts recoverable on the "Queensway"—Ottawa since the signing of the agreement with the Government of Canada, the Federal District Commission and the City of Ottawa, on March 19, 1957.

#### EXPENDED BY DEPARTMENT:

Year ending March 31, 1958.....	\$ 563,956
" " " 1959.....	1,720,076
" " " 1960.....	3,860,475
" " " 1961.....	5,723,245
" " " 1962.....	3,889,962
" " " 1963.....	3,778,739
" " " 1964.....	5,215,154
" " " 1965.....	3,411,781
" " " 1966.....	1,904,433

\$30,067,821

#### RECOVERED FROM GOVERNMENT OF CANADA:

Year ending March 31, 1958.....	\$ 204,500
" " " 1959.....	109,221
" " " 1960.....	773,681
" " " 1961.....	1,367,729
" " " 1962.....	1,380,118
" " " 1963.....	951,729
" " " 1964.....	1,211,642
" " " 1965.....	1,071,872
" " " 1966.....	483,000

\$ 7,553,492

Further amounts to be recovered based on expenditure to March 31, 1966.. 67,997

\$ 7,621,489

Recovered from the City of Ottawa..... 4,400,000

#### AMOUNTS TO BE RECOVERED FROM:

The City of Ottawa.....	\$1,813,660	
The Government of Canada and the City of Ottawa in process.....	1,198,762	3,012,422

TOTAL RECOVERIES..... \$15,033,911

NET ESTIMATED COST TO MARCH 31, 1966..... \$15,033,910

### STATEMENT V Statement of Receipts For the Fiscal Years Ending March 31, 1966 and March 31, 1965

	YEARS ENDING MARCH 31, 1966	YEARS ENDING MARCH 31, 1965
Sales of land and buildings.....	\$ 247,424	\$ 357,341
Property Rentals.....	838,344	716,679
Sales of service and materials.....	546,284	596,092
Permits-sign and housemoving.....	101,144	87,506
Gas pump revenue.....	—	2,325
Gas line franchises.....	6,300	6,110
Burlington Bay Skyway.....	1,028,756	897,207
Garden City Skyway.....	679,657	591,289
Miscellaneous.....	161,377	596,150
TOTAL RECEIPTS.....	<u>\$3,609,286</u>	<u>\$3,850,699</u>
Distribution:		
Ordinary revenue.....	\$3,254,470	\$2,964,070
Capital receipts.....	354,816	886,629
	<u>\$3,609,286</u>	<u>\$3,850,699</u>

STATEMENT VI  
Department of Highways Ontario  
Comparison of Unit Prices on Contracts for Use in Tender Price Index  
For Period April 1, 1950 to March 31, 1966

Fiscal Year	Clearing Acre	Grubbing Acre	Earth Excavation Cu. Yd.	Earth Excavation Grading Cu. Yd.	Earth Excavation Borrow Cu. Yd.	Rock Excavation Cu. Yd.	Granular "A" Ton	Granular "B" Ton	% Crushed Gravel "A" Ton	% Crushed Gravel "B" Ton	Sand Cushion Ton	Earth Compaction Cu. Yd.	Compaction Equipment Hour	Water for Compaction M. Gal.	Concrete in Culverts Cu. Yd.	Placing Concrete Pipe 12" Lin. Ft.	Placing C.I.P. 18" Lin. Ft.
1950/51	\$ 96.78	\$ 130.98	\$ .36	\$ —	\$ —	\$ 1.42	.87	.57	\$ 1.11	.89	.60	.026	\$ —	\$ 6.19	\$ 20.65	\$ —	\$ —
1951/52	148.84	151.20	.54	—	—	1.78	1.51	.83	1.50	1.01	.71	.032	—	7.50	26.57	—	—
1952/53	125.88	170.20	.39	—	—	1.64	1.38	.88	1.50	1.27	.83	.029	—	6.74	22.22	—	—
1953/54	127.63	144.39	.37	—	—	1.27	1.17	.64	1.40	1.00	.63	.027	—	6.24	23.14	—	—
1954/55	132.50	153.49	.40	—	—	1.73	1.15	.75	1.36	1.11	.73	.027	—	6.05	22.06	—	—
1955/56	184.15	213.20	.44	—	—	1.81	1.28	.92	1.40	1.25	.66	.035	—	5.69	26.13	—	—
1956/57	235.79	251.10	.60	—	—	2.43	1.48	1.02	1.48	1.35	1.02	.045	—	6.44	32.11	—	—
1957/58	203.59	257.52	.45	—	—	2.14	1.34	.82	1.39	1.30	.83	.044	—	5.39	27.56	—	—
1958/59	190.61	235.17	.40	—	—	2.08	1.26	.86	1.24	1.15	.74	.042	—	4.48	25.05	—	—
1959/60	163.30	200.55	.41	—	—	2.01	1.35	.81	1.21	1.25	.83	—	6.44	4.30	26.09	—	—
1960/61	162.63	207.19	.43	—	—	1.82	1.18	.70	1.60	1.24	.73	—	6.65	3.75	24.62	—	—
1961/62	162.19	188.27	.36	—	—	1.77	1.21	.68	1.12	1.11	.72	—	8.24	3.21	21.13	—	—
1962/63	201.68	197.17	.45	—	—	1.85	1.25	.82	1.26	1.22	.74	—	9.50	3.25	25.79	—	—
1963/64	270.43	250.92	.57	—	—	2.22	1.49	.97	1.48	1.33	.77	—	9.50	3.77	28.96	—	—
1964/65	285.29	299.10	.57	—	—	2.45	1.39	1.19	1.48	1.48	.87	—	9.50	3.51	28.33	—	—
R 1965/66	353.87	343.89	—	.67	.67	2.59	1.66	1.39	1.13	1.24	.86	—	10.85	4.21	40.30	1.69	.83



**STATEMENT VI (Cont'd)**  
**Department of Highways Ontario**  
**Comparison of Unit Prices on Contracts for Use in Tender Price Index**  
**For Period April 1, 1950 to March 31, 1966**

Fiscal Year	Concrete Base Sq. Yd.	Concrete Pavement Sq. Yd.	Bituminous Hot Mix Top Course Ton	Bituminous Hot Mix Base Course Ton	Structural Steel Fabrication Ton	Structural Steel Erection Ton	Structural Steel Fabrication Supply and Erection Ton	Structural Steel Delivery Ton	Concrete in Structures Cu. Yd.	Concrete in Structure Foundations Cu. Yd.	Concrete in Structures Cu. Yd.
1950/51	—	—	3.35	3.25	223.41	75.09	—	—	29.63	—	—
1951/52	—	—	4.37	4.24	239.72	76.84	—	—	32.29	—	—
1952/53	—	—	4.11	4.26	256.02	78.58	—	—	33.49	—	—
1953/54	—	—	3.24	3.22	216.76	60.27	—	—	32.88	—	—
1954/55	—	—	2.82	2.93	194.46	40.04	—	—	27.36	—	—
1955/56	—	—	4.23	3.32	281.23	96.28	—	—	36.64	—	—
1956/57	—	—	4.74	3.82	354.80	119.12	—	—	39.85	—	—
1957/58	—	—	4.37	3.49	277.96	87.27	—	—	38.11	—	—
1958/59	—	—	4.12	3.07	237.93	59.50	—	—	31.98	—	—
1959/60	—	—	4.52	3.41	246.28	63.69	—	—	37.77	—	—
1960/61	—	—	4.12	3.59	277.75	75.32	—	—	32.66	—	—
1961/62	—	—	3.78	2.79	233.71	39.78	—	—	29.50	—	—
1962/63	—	—	4.62	3.74	267.18	58.48	—	—	31.34	—	—
1963/64	—	—	5.24	4.57	259.06	50.86	—	—	31.85	—	—
1964/65	—	—	4.17	4.37	278.79	60.00	—	—	37.74	—	—
R1965/66	3.38	3.26	4.71	5.02	—	—	405.63	4.48	—	33.35	61.32

R: Major revision—Prices published are adjusted to maintain comparability.  
 Analysis Section, Financial Comptroller's Branch, April 1966.

STATEMENT VII

Burlington Bay Skyway

Comparative Statement of Toll Collections, Revenues and Expenditures  
For the Fiscal Years Ending March 31, 1966 and March 31, 1965

	YEAR ENDING MARCH 31, 1966	YEAR ENDING MARCH 31, 1965	INCREASE (DECREASE)	PERCENTAGE
REVENUES:				
Toll Revenue Earned				
Class I Vehicles.....	\$734,927	\$685,560	\$ 49,367	7.20
Class II Vehicles.....	79,987	61,046	18,941	31.03
Class III Vehicles.....	168,952	119,016	49,936	41.96
Total Revenue Earned.....	\$983,866	\$865,622	\$118,244	13.66
Plus Ticket and Tokens sold but not presented and other net adjust- ment.....	38,418	25,767	12,651	49.09
	\$1,022,284	\$891,389	\$130,895	14.68
Add Premium United States Funds	6,472	5,818	654	11.24
Total Revenue.....	\$1,028,756	\$897,207	\$131,549	14.66
DIRECT EXPENDITURES:				
Toll Operating Staff Salaries.....	\$208,109	\$174,698	\$33,411	19.12
Travelling Expenses.....	2,666	1,696	970	57.19
Office Expenses and Tokens.....	7,568	(2,360)	9,928	—
Light, Heat, Water, Telephone, etc.....	6,910	9,310	(2,400)	(25.78)
Maintenance of Building.....	4,258	2,599	1,659	63.83
Maintenance of Equipment.....	8,027	7,217	810	11.22
Rental of Equipment.....	10,992	17,577	(6,585)	(37.46)
Excess of Revenues over expendi- tures.....	\$248,530	\$210,737	\$37,793	17.93
	\$780,226	\$686,470	\$93,756	13.66
TRAFFIC:				
Class I vehicles.....	8,668,755	7,972,365	696,390	8.73
Class II vehicles.....	480,746	333,679	147,067	44.07
Class III vehicles.....	977,478	611,492	365,986	59.85
TOTAL.....	10,126,979	8,917,536	1,209,443	13.56

## STATEMENT VIII

## Garden City Skyway

**Comparative Statement of Toll Collection Revenues and Expenditures  
For the Fiscal Years Ending March 31, 1966 and March 31, 1965**

	YEAR ENDING MARCH 31, 1966	YEAR ENDING MARCH 31, 1965	INCREASE (DECREASE)	PERCENTAGE
<b>REVENUES:</b>				
Toll Revenue Earned:				
Class I vehicles.....	\$556,292	\$494,121	\$ 62,171	12.58
Class II vehicles.....	41,994	32,495	9,499	29.23
Class III vehicles.....	63,294	49,094	14,200	28.92
	<hr/>	<hr/>	<hr/>	<hr/>
Total Revenue Earned.....	661,580	575,710	85,870	14.91
Plus-Tickets and tokens sold but not presented and other net ad- justment.....	5,563	2,826	2,737	96.85
	<hr/>	<hr/>	<hr/>	<hr/>
	667,143	578,536	88,607	15.32
Add Premium United States Funds.....	12,515	12,753	(238)	(1.87)
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Total Revenue.....	679,658	591,289	88,369	—
<b>DIRECT EXPENDITURES:</b>				
Toll operating staff salaries.....	\$145,951	\$134,347	\$ 11,604	8.64
Travelling expenses.....	743	1,126	(383)	(34.02)
Office expenses.....	3,292	7,314	(4,022)	(54.99)
Light, heat, water, telephone, etc.	9,198	11,764	(2,566)	(21.81)
Maintenance of building.....	1,648	1,842	(194)	(10.53)
Maintenance of equipment.....	4,327	5,732	(1,405)	(24.51)
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	\$165,159	\$162,125	\$ 3,034	1.87
Excess of Revenue over Expenditure	<u>\$514,499</u>	<u>\$429,164</u>	<u>\$ 85,335</u>	<u>19.88</u>
<b>TRAFFIC:</b>				
Class I vehicles.....	5,847,343	4,908,466	938,877	19.13
Class II vehicles.....	220,582	158,441	62,141	39.22
Class III vehicles.....	344,258	220,732	123,526	55.96
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TOTAL.....	6,412,183	5,287,639	1,124,544	21.27
<b>TOLL RATES:</b>				
			CASH	TOKENS
Class I vehicles, passenger vehicles and trucks having not more than two axles and a weight-carrying capacity of less than one ton .....			.15c.	.05c.
Class II vehicles, passenger vehicles with trailers and trucks having not more than two axles and a weight-carrying capacity of one ton or more.....			.25c.	.10c.
Class III vehicles, trucks with three axles or more and public vehicles			.45c.	.15c.

Analysis Section, Financial Comptroller's Branch, October 1966.

## LEGAL BRANCH

**D. A. CROSBIE, B.Sc.F., Director, Legal Branch**

### SOLICITORS

The Director and four solicitors are located in the main office of the Department at Downsview to provide legal services and advice to the various branches of the Department. There is a regional solicitor in the Toronto regional office to provide legal services and advice to personnel of that office.

### INSURANCE AND CLAIMS SECTION

This section deals with all matters pertaining to insurance coverage carried by this and other departments, and is also responsible for the handling, negotiating and settling of various types of claims. The section investigates and supervises the settlement of Workmen's Compensation third party claims where injuries occur to Government employees. There are other miscellaneous types of tortious claims which are also dealt with by this section.

#### VOLUME OF CLAIMS AND INVESTIGATION

The volume of claims and their various categories for the fiscal year under review (with comparative figures for 1964-65) is as follows:

	1965-66	1964-65
Claims against Department—non-repair of highways.....	686	567
Claims against Department—miscellaneous liability.....	464	383
Claims by Department—for damage to Department property.....	5,554	4,515
Claims by Department—for personal injuries to employees.....	52	63
Investigations of accidents—involving Government vehicles.....	883	1,015
TOTALS.....	7,639	6,543

It will be noted that the number of claims for 1965-66 amounted to 1,096 in excess of 1964-65. The above figures do not include complaints on a variety of minor matters which were also investigated and resolved.



## OPERATIONS BRANCH

J. B. WILKES, P.Eng., Director of Operations

### THE SIGN AND BUILDING PERMITS SECTION

R. P. Bruce, Superintendent

Building Permits:	
Applications received.....	5,295
Permits issued.....	4,968
Entrance Permits:	
Applications received.....	2,490
Permits issued.....	2,306
Encroachment Permits:	
Applications received.....	919
Permits issued.....	871
Sign Permits:	
Applications received.....	6,018
New permits issued.....	1,948
Permit renewals.....	3,911

NOTE: Licences are issued according to the calendar year, January 1st to December 31st.

### FIELD ADVERTISING SIGN PERMITS

Fiscal Year April 1st, 1965 to March 31st, 1966

Number of Field Advertising Sign Permits issued for fiscal year.....	4,741
Value of Field Advertising Sign Permits issued for fiscal year.....	\$56,900

NOTE: Permits are issued for the calendar year.

### FIELD ADVERTISING SIGNS

DISTRICT	No. RECEIVED	No. APPLICATIONS	No. REFUSED	No. PENDING	AMOUNT RECEIVED
Chatham.....	304	300	4	—	\$ 4,045.00
London.....	370	370	—	—	4,600.00
Stratford.....	365	358	7	—	3,720.00
Hamilton.....	165	159	5	1	4,510.00
Owen Sound.....	522	500	22	—	5,575.00
Toronto.....	264	261	3	—	3,830.00
Port Hope.....	328	327	1	—	3,910.00
Kingston.....	295	291	4	—	2,575.00
Ottawa.....	220	215	5	—	4,640.00
Bancroft.....	209	209	—	—	1,510.00
Huntsville.....	397	397	—	—	4,005.00
North Bay.....	186	185	1	—	2,500.00
New Liskeard.....	180	179	1	—	1,655.00
Cochrane.....	73	68	4	1	615.00
Sudbury.....	229	229	—	—	2,530.00
Sault Ste. Marie.....	264	262	2	—	2,595.00
Fort William.....	261	261	—	—	2,375.00
Kenora.....	170	170	—	—	1,710.00
TOTALS.....	4,802	4,741	59	2	\$56,900.00

## VALUATION OF BUILDING PERMITS

DISTRICT	VALUE OF PERMITS ISSUED
Chatham.....	\$ 15,158,481
London.....	7,753,246
Stratford.....	7,753,091
Hamilton.....	33,650,245
Owen Sound.....	5,374,796
Toronto.....	41,506,538
Port Hope.....	3,847,287
Kingston.....	3,297,856
Ottawa.....	5,719,381
Bancroft.....	497,455
Huntsville.....	2,306,877
North Bay.....	4,296,652
New Liskeard.....	846,475
Cochrane.....	460,345
Sudbury.....	912,925
Sault Ste. Marie.....	714,100
Fort William.....	1,141,130
Kenora.....	1,020,839
GRAND TOTAL.....	\$136,257,719

## CONSTRUCTION DIVISION

H. A. Tregaskes, P.Eng., Construction Engineer

During the fiscal year ending March 31, 1966, a very large amount of construction was completed despite the fact that in the northern part of the province work was considerably hindered by inclement weather. Work on major projects under way for several years continued, while work on important new undertakings was started.

At the end of the year, on the important Macdonald-Cartier Freeway, four lanes were completely paved and opened to traffic from Windsor to Gananoque, while work continued apace on the last two sections east of Gananoque and east of the Iroquois County Road, which, when finished, will result in final completion of the Macdonald-Cartier Freeway. A six mile portion of the collector-distributor section of the Toronto By-pass on the Macdonald-Cartier Freeway was opened and operated with great success. In addition, extensive bridge and interchange construction work was carried out across the province on this Freeway.

The Ottawa Queensway work continued with only an approximate three-quarter section to finish from Hurdman Bridge to Concord St., to complete this Expressway.

Work progressed well on new Highway 403 at Hamilton and at Brantford.

On the Queen Elizabeth Way, widening to six lanes west of Toronto continued, while reconstruction work at Jordan and Vineland sideroads proceeded favourably.

The first section of new dual Highway 406 at St. Catharines was opened to traffic.

The structural steel work on the Quinte Skyway, a major structure over the Bay of Quinte, was completed by year's end.

Major projects commenced during the year included the Thorold Tunnel, on which exceptionally good progress was made by year's end, and the Kitchener-Waterloo and Lakehead Expressways.

In northern Ontario an 87 mile section of Highway 11 between Fort Frances and Atikokan was opened in early summer by Premier Robarts. Major reconstruction was under way on a continuous 51 miles of Highway 105, the Red Lake Road. The new Smooth Rock Falls to Pinard Road, covering 45 miles, was opened up to public travel late in the fall. Work proceeded well on the new Sudbury-Timmins highway with 50 miles of work in progress during the year.

A great deal of reconstruction of sections of old highways and the building of a large number of bridges were carried out throughout the province.

### SUMMARY OF NEW SECTIONS OF KING'S HIGHWAYS

Completed During Fiscal Year 1965-66

NEW 4-LANE ROADS		
Hwy. No.	LOCATION	MILES
2	Windsor easterly to Hwy. 98.....	2.4
2	Trenton easterly.....	1.9
8	Stamford northerly.....	1.4
10	Cooksville northerly to Burnhamthorpe Road.....	1.6
10	Brampton northerly.....	7.6
11	Severn Bridge southerly.....	3.5
401	Kent County interchange to Kent-Elgin County Line (completed south lane).....	24.6
401	Iroquois County Road to Hwy. 16 (completed north lane).....	11.0
403	Longwood Rd. to Aberdeen Ave.....	1.9
406	St. Catharines southerly.....	3.6
Ottawa- Queens- way	O'Connor St. to Concord St.....	1.0
TOTAL.....		60.5



Hwy. 401 — Keele Street. Paving, April 1965. photo 6530-B — (Construction Division)



NEW 2-LANE ROADS		
Hwy. No.	LOCATION	MILES
11	Between Atikokan and Fort Frances.....	40.0
12	Beaverton by-pass.....	8.2
68	La Cloche Channel northerly.....	7.0
101	East of Hawk Junction.....	7.9
101	West of Chapleau.....	10.7
17	Carp westerly.....	10.0
40	Sarnia by-pass.....	4.6
599	Ignace northerly.....	80.0
807	Smooth Rock to Pinard.....	45.0
TOTAL.....		213.4

## NEW BRIDGES COMPLETED IN 1965-66

During the fiscal year, 95 new bridges were completed.

TABLE SHOWING TOTALS OF WORK DONE

CLASS OF WORK	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Automatic signals at railway crossings.....	23	—	—
Bituminous hot mix pavement.....	—	1,206,287.87	406.21
Bituminous mulch and cold mix.....	—	111,672.05	1,563.60
Bituminous prime on gravel roads.....(gals.)	1,432,917	—	560.43
Bituminous resurfacing old pavement.....	—	282,098.65	414.75
Bituminous surface treatment.....(gals.)	1,048,378	—	344.00
Bridges built.....	95	—	—
Bridges painted.....	79	—	—
Calcium dust layer—gravel roads.....	—	7,364.81	1,111.00
Calcium for de-icing roads.....	—	71.00	—
Concrete base pavement asphalt top.....	—	11,278.00	9.18
Concrete pavement.....(sq. yds.)	—	1,027,838.00	43.92
Crushed gravel and stone (by contract).....	—	8,892,622.25	1,137.49
Crushed gravel and stone (by department forces).....	—	831,266.86	7,991.57
Grading and culverts.....	—	—	621.51
Granular base on new grading.....	—	15,451,349.62	653.58
Granular base on old grading.....	—	426,938.00	315.43
New buildings erected this year.....	99	—	—
Off-road parks maintained.....	245	—	—
Roads snowplowed and kept open (King's hws.).....	—	—	11,032.98
Roads snowplowed and kept open (secondary hws.).....	—	—	—
Roads snowplowed and kept open (King's hws.).....	—	—	11,032.98
Roads snowplowed and kept open (secondary hws.).....	—	—	—
Roadside picnic places maintained.....	773	—	—
Routine maintenance (King's hws.).....	—	—	11,032.98
Routine maintenance (secondary hws.).....	—	—	3,030.66
Salt for de-icing roads.....(raw)	—	237,527.18	—
Salt in sand, stockpiled.....	—	53,832.95	—
Sand for winter maintenance.....	—	953,931.00	—
Scale houses maintained.....	46	—	—
Seeding by department forces.....(acres)	2,390.12	—	—
Shrubs received and planted.....	39,479	—	—
Signs newly erected or replaced.....	80,853	—	—
Snow hedges planted this year.....	—	—	902.29
Snow fence erected, dismantled, stored.....	—	—	11.53
Traffic lights installed this year.....	244	—	—
Weed control.....	—	—	9,644.65
Zone painting (King's hws.).....(gals.)	154,567.90	—	8,622.00
Zone painting (secondary hws.).....(gals.)	11,247.10	—	732.48
Development roads built.....	—	—	125.75





Hwy. 401 — Avenue Road. New 50 foot mercury luminaires. photo 6773 night, 6895 day



MAINTENANCE DIVISION

E. J. Orr, P. Eng., Maintenance Engineer

DEPARTMENT'S CRUSHING PLANT

The Department crusher from the Kenora District produced a total of 120,104 tons of crushed gravel; 48,306 tons in Kenora District and 71,798 tons in the Fort William District.

MULCH PAVEMENT

Mulch pavement, mixed and laid by Department forces, totalled 66.65 miles in the following Districts:

Port Hope.....	2.00 miles
Bancroft.....	9.60 “
Huntsville.....	19.00 “
North Bay.....	4.20 “
New Liskeard.....	26.75 “
Sault Ste. Marie.....	5.10 “
	<hr/>
	66.65 miles

ZONE PAINTING

Our 9 dual and 12 single zone striping machines painted 10,944 miles of King's and Secondary Highways, plus 11 miles of County Roads.

Our program of converting all our zone striping machines to enable them to use the bead overlay method of zone painting was completed during the winter of 1964-65 so that all paint and beads were applied by this method this year.

There were no further applications of thermoplastic traffic paints done this year. However, previous applications were periodically inspected to ensure a proper evaluation under actual traffic conditions.

SIGNS

During the year, district forces erected 80,853 signs of various types and sizes ranging from fingerboards, curve and stop signs to the large cantilever and overhead metal signs.

WEIGH SCALES

Two new weigh scales were installed in 1965 at the following locations:

- District 7 : Highway 401, 0.5 miles east of Bowmanville  
30 ton 10' x 12' axle load to replace 30 ton  
10' x 10' axle load scale.
- District 17: Highway 17 at the junction of Highway 108  
30 ton 10' x 12' axle load to replace 30 ton  
10' x 10' axle load scale.

PAVEMENT MAINTENANCE

The Department's Pavement De-slicker worked from June to October burning excess asphalt from sections of highways to correct slippery conditions due to flushing. During this time, the machine completed the treatment of approximately 9 miles of pavement.

### WINTER MAINTENANCE

The winter of 1965-66 was a very severe winter due to the unusually high frequency of snow storms and other inclement weather conditions. As a direct result of this type of weather, our plowing, sanding and salting operations were increased over the previous two years and above average quantities of de-icing chemicals and abrasives were used.

Our Winter Works Program resulted in the Districts carrying out such projects as clearing, grubbing, rock excavation, granular base, tree trimming and removal and developing and improving roadside picnic parks.

### MAINTENANCE MANAGEMENT STUDY

This study began in May, 1965, with the retaining of a firm of consultants who are specialists in the field of highway maintenance methods and operating practices.

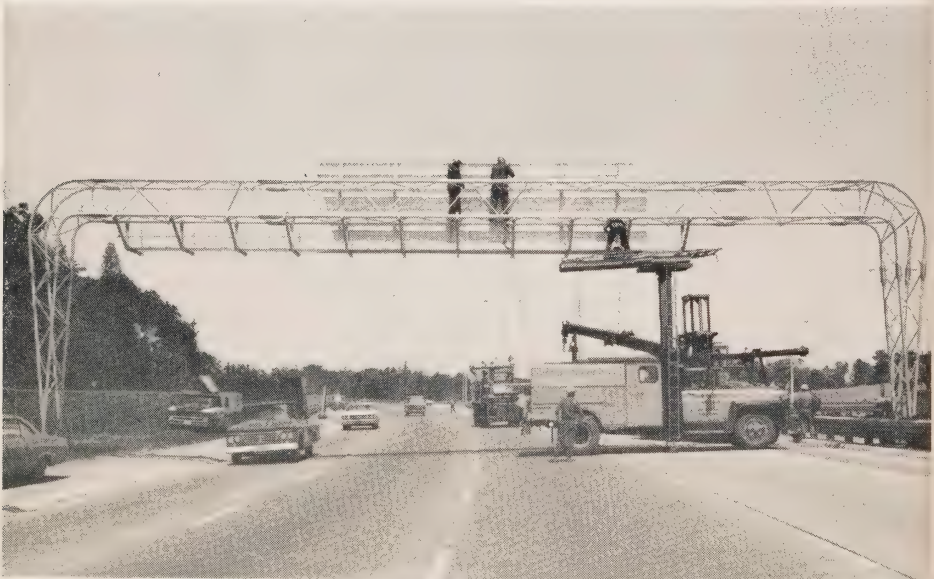
Factors relating to cost accounting, work load, performance measurement, and training of maintenance personnel are receiving particular attention.

### ELECTRICAL SECTION

During the year electrical equipment was installed as per the attached detailed lists. This was in addition to many miscellaneous jobs such as wiring small buildings, radio towers, etc., and all normal maintenance work.

### SUMMARY

HIGHWAY LIGHTING	—1572 Street Lights
TRAFFIC SIGNALS (installed or re-built)	— 192
FLASHERS	— 78
SIGN LIGHTING	— 389
WEIGH SCALE, SALT SHEDS, PATROL OFFICE, FIELD OFFICE	— 209



Hwy. 401 — Avenue Road. Erection of overhead signs. photo 6737 — (Operations Branch, Maint. Div.)



## HIGHWAY LIGHTING

## Installations Put into Operation

April 1, 1965-March 31, 1966

## DISTRICT 1—CHATHAM

1-401-11	Hwy. 401 and Oxford (temporary); (4) 400-watt mercury vapour units.
1-401-2-20	Hwy. 401 and 2, Tilbury East, (13), 400-watt mercury vapour units.
1-3B-50	Hwy. 3B and 3rd Concession, (3) 400-watt mercury vapour units.
1-3B-51	Hwy. 3B and Grand Marais, (2) 400-watt mercury vapour units.
1-98-55	Hwy. 98 and Walker Rd., (8) 400-watt mercury vapour units.
1-40-57	Hwy. 40, Courtright, (17) 400-watt mercury vapour units.
1-21-81-58	Hwy. 21 and 81, (23) 220-watt mercury vapour units.
1-21-60	Hwy. 21, Wyoming, (7) 400-watt mercury vapour units.
1-18-64	Hwy. 18, Turkey Creek (temporary); (5) 400-watt mercury vapour units.
1-21-66	Hwy. 21, Thamesville, (14) 400-watt mercury vapour units.
1-2-68	Hwy. 2, Ruscom River, (2) 400-watt mercury vapour units.
1-18-69	Hwy. 18, Elliot Rd., (14) 400-watt mercury vapour units.
1-401-84	Hwy. 401 and Maidstone (temporary); (6) 400-watt mercury vapour units.
1-21-85	Hwy. 21, Pinery Park (temporary); (8) 400-watt mercury vapour units.
	Hwy. 401 service centre, (14) 400-watt mercury vapour units.
1-7-79-70	Hwy. 7 and 79, (4) 400-watt mercury vapour units.

## DISTRICT 2—LONDON

2-4-7-66	Hwy. 4 and 7, Elginfield, (3) 400-watt mercury vapour units. Service Centre W.5, (14) 400-watt mercury vapour units.
2-21-83-106	Hwy. 21 and 83, Brewster, (4) 400-watt mercury vapour units.
2-4-107	Hwy. 4 and County Rd., 8 Clinton, (5) 400-watt mercury vapour units.

## DISTRICT 3—STRATFORD

3-23-22	Town of Mitchell, C.N.R. overhead, (2) 400-watt mercury vapour units.
3-4-55	Hamlet of Londesboro, (9) 400-watt mercury vapour units.
3-7-58	Hwy. 7, Village of Rockwood, Guelph East, (2) 400-watt mercury vapour units.

## DISTRICT 4—HAMILTON

4-Q.E.W.-27	Q.E.W. and Central Ave., Fort Erie, (5) 400-watt mercury vapour units.
4-Q.E.W.-28	Q.E.W. and Concession Rd., (2) 400-watt mercury vapour units.
4-406-99	Hwy. 406 and West Chester, (3) 400-watt mercury vapour units.
4-406-100	Hwy. 406 and Glendale, (6) 400-watt mercury vapour units; (13) fluorescent fixtures.
4-403-24-117	Hwy. 24 and 403, Brantford, (26) 400-watt mercury vapour units.
4-8-8A-135	Hwy. 8 and 8A, St. Davids, (4) 400-watt mercury vapour units.
4-Q.E.W.-403-141	Q.E.W. and Hwy. 403, (4) 400-watt mercury vapour units.
4-58-154	Hwy. 58 and Thorold Tunnel at Bailey Bridge, (4) 400-watt mercury vapour units.
4-Q.E.W.-182	Q.E.W. and Sodom Rd., (2) 400-watt mercury vapour units.
4-58-184	Hwy. 58 and Lincoln St., (2) 400-watt mercury vapour units.
4-6-197	Hwy. 6, Wolf Island North, (14) 400-watt mercury vapour units.
4-Q.E.W.-288	Q.E.W. and Jordon Rd., (6) 400-watt mercury vapour units.
4-6-289	Hwy. 6 at Northcliff, (10) 400-watt mercury vapour units.
4-Q.E.W.-290	Q.E.W. and Guelph Line, (30) 400-watt mercury vapour units.
4-Q.E.W.-291	Q.E.W. and Victoria Ave., Vineland, (2) 400-watt mercury vapour units.

## DISTRICT 5—OWEN SOUND

5-27-22	Hwy. 27, Wyebridge, (2) 400-watt mercury vapour units.
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## DISTRICT 6—TORONTO

- 6-400-401-28 Hwy. 400 and Hwy. 401 (removed temporary); (53) 400-watt mercury vapour units.
- 6-401-29 Hwy. 401 and Jane St. (removed temporary); (17) 400-watt mercury vapour units.
- 6-401-30 Hwy. 401 and Keele St., (112) 400-watt mercury vapour units; (110) 700-watt mercury vapour units.
- 6-401-31 Hwy. 401 and Dufferin St., (104) 400-watt mercury vapour units; (90) 700-watt mercury vapour units.
- 6-7-10-64 Hwy. 7 and 10 (removed temporary); (3) 400-watt mercury vapour units.
- 6-401-67 Hwy. 401 and C.N.R. overpass (removed temporary); (10) 400-watt mercury vapour units.
- 6-401-89 Hwy. 401 and Spadina, (106) 400-watt mercury vapour units; (60) 700-watt mercury vapour units.
- 6-401-92 Hwy. 401 and Woodbine (temporary); (37) 400-watt mercury vapour units.
- 6-11-114 Hwy. 11 and Eagle Ave., (2) 400-watt mercury vapour units.
- 6-7-116 Hwy. 7 at Keele St., (8) 400-watt mercury vapour units.
- 6-27-125 Hwy. 27 and Dixon Rd., (35) 400-watt mercury vapour units.
- 6-401-154 Hwy. 401 and Jane St., (56) 400-watt mercury vapour units; (24) 700-watt mercury vapour units.
- 6-48-163 Hwy. 48 and Sutton, (3) 400-watt mercury vapour units.
- 6-48-164 Hwy. 48 and Pefferlaw, (1) 400-watt mercury vapour unit.
- 6-12-7A-165 Hwy. 7A and 12, Manchester, (5) 400-watt mercury vapour units.
- 6-122-166 Hwy. 122, Truscott Driver, (2) 400-watt mercury vapour units.
- 6-7-12-173 Hwy. 7 and 12, Brooklin, (4) 400-watt mercury vapour units.
- 6-400-7-284 Hwy. 400 and 7, (3) 400-watt mercury vapour units.
- 6-401-291 Hwy. 401 and Dixie Rd., (22) 400-watt mercury vapour units.
- 6-2-292 Hwy. 2 and Second Line, (2) 400-watt mercury vapour units.
- 6-400-293 Hwy. 400 and Sheppard, (8) 400-watt mercury vapour units.
- 6-401-294 Hwy. 401 and Pickering, (5) 400-watt mercury vapour units.
- 6-7-295 Hwy. 7 and 4th Line, (2) 400-watt mercury vapour units.  
Hwy. 401 and Yonge St. (removed temporary); (46) 400-watt mercury vapour units.  
Hwy. 401 and Champlain (removed temporary); (30) 400-watt mercury vapour units.  
Hwy. 401 and Carhart (removed temporary); (24) 400-watt mercury vapour units.  
Hwy. 401 and Pellatt (removed temporary); (38) 400-watt mercury vapour units.  
Hwy. 401 and Wendell Ave. (removed temporary); (13) 400-watt mercury vapour units.

## DISTRICT 7—PORT HOPE

- 7-401-115-12 Hwy. 401 and 115, (2) 400-watt mercury vapour units.
- 7-35-29 Hwy. 35, Rosedale, (8) 400-watt mercury vapour units.
- 7-115-35-40 Hwy. 115 and 35, Orono, (6) 400-watt mercury vapour units.
- 7-35-44 Hwy. 35, Coboconk, (4) 400-watt mercury vapour units.
- 7-7-36-57 Hwy. 7 and 36, (3) 400-watt mercury vapour units.

## DISTRICT 8—KINGSTON

- 8-37-401-35 Hwy. 37 and Hwy. 401, (18) 400-watt mercury vapour units.
- 8-2-57 Hwy. 2, Trenton Air Station, (30) 400-watt mercury vapour units.
- 8-401-56 Hwy. 401, Ivy Lea Bridge (temporary); (7) 400-watt mercury vapour units.
- 8-37-401-61 Hwy. 401 and 37, Belleville, (19) 400-watt mercury vapour units.
- 8-401-14-75 Hwy. 401 and 14, Belleville, (32) 400-watt mercury vapour units.

- 8-401-84 Hwy. 401 at entrance to Thousand Island Bridge, (10) 400-watt mercury vapour units.
- 8-401-86 Hwy. 401, east of Odessa, (15) 400-watt mercury vapour units.
- 8-401-87 Hwy. 401, west of Odessa, (15) 400-watt mercury vapour units.  
E-6 (Texaco) Service Centre, (5) 400-watt mercury vapour units.

## DISTRICT 9—OTTAWA

- 9-17-67 New Hwy. 17, Jct. Hwy. 44, westerly to Antrim W.P. 62-63;  
(3) 400-watt mercury vapour units.
- 9-17-44-69 New Hwy. 17, Village of Plantagenet, (3) 400-watt mercury vapour units.
- 9-401-83 Hwy. 401 at Carman Rd., (12) 400-watt mercury vapour units.
- 401 E-11 Service Centre Lancaster, (15) 400-watt mercury vapour units.
- 9-31-94 Hwy. 31, Metcalf Rd., (4) 400-watt mercury vapour units.

## DISTRICT 14—NEW LISKEARD

- 14-11-101-5 Jct. Hwy. 101 and 11, Matheson intersection.
- 14-11B-558-16 Hwy. 11B at Jct. Hwy. 558, Haileybury.

## DISTRICT 17—SUDBURY

- 17-68-1 Hwy. 68, north and south of Little Current swing bridge, (6) 400-watt mercury vapour units
- 17-17-5 Hwy. 17, Sudbury, west limits of Balsam St., Copper Cliff, (56) 400-watt mercury vapour units.

## DISTRICT 19—FORT WILLIAM

- 19-11-17-7 Jct. Hwys. 11 and 17, Nipigon, (3) 400-watt mercury vapour units.
- 19-17-61-8 Hwy. 61 and 15th Side Rd., Neebing Twp., (1) 400-watt mercury vapour unit.
- 19-61-24 Hwy. 61 and Scott St., (1) 400-watt mercury vapour unit.
- 19-17-25 Hwy. 17, (4) 400-watt mercury vapour units.

## DISTRICT 20—KENORA

- 20-105-17-8 Hwy. 105 and Hwy. 17, Vermillion Bay W.P. 293-64-1, (2) 400-watt mercury vapour units.

## TRAFFIC SIGNALS

## Installations Put into Operation

April 1, 1965-March 31, 1966

## DISTRICT 1—CHATHAM

- 1-2-3 Hwy. 2 and Walker Rd., fully actuated.
- 1-3B-12 Hwy. 3B, Grand Marais, actuated fixed time.
- 1-98-16 Hwy. 98 and Walker Rd., fully actuated.
- 1-3B-45 Hwy. 3B, 3rd Con., actuated fixed time.

## DISTRICT 2—LONDON

- 2-2-4-13 Jct. Hwys. 2 and 4, Lambeth, fully actuated.

## DISTRICT 4—HAMILTON

- 4-Q.E.W.-4 Q.E.W. at Victoria Ave., Vineland, semi-actuated.
- 4-Q.E.W.-10 Q.E.W. and Sodem Rd., fully actuated.
- 4-Q.E.W.-13 Q.E.W. and Central Ave., Fort Erie, fully actuated.
- 4-Q.E.W.-14 Q.E.W. and Concession, Fort Erie, fully actuated.
- 4-5-49 Hwy. 5 at Waterdown, fully actuated.
- 4-58-57 Hwy. 58 at Lincoln St., fully actuated.
- 4-406-65 Hwy. 406 and Geneva St., fully actuated.

4-3A-58-88	Hwy. 58 at Singers Corners, fully actuated.
4-20-96	Hwy. 20 at Montrose Rd., City of Niagara Falls, fully actuated.
4-20-102	Hwy. 20 and Mude St., fully actuated.
4-Q.E.W.-103	Q.E.W. at Greens Rd., Stoney Creek, fully actuated.
4-5-24-99-114	Hwys. 24, 5 and 99, Osbernes Corners, fully actuated.
4-Q.E.W.-123	Q.E.W. at Jordon Rd., semi-actuated.
4-25-124	Hwy. 25 and Guelph Line and north service road, fully actuated.

## DISTRICT 5—OWEN SOUND

5-27-8	Hwy. 27, Wyebridge, fixed.
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## DISTRICT 6—TORONTO

6-5-13	Hwy. 5 and 10, Cooksville, fixed time.
6-11-32	Hwy. 11 and Eagle Ave., Newmarket, fully actuated.
6-7-58	Hwy. 7, 10 and Brampton By-Pass, fixed time.
6-7-68	Hwy. 7 and Keele St., fully actuated.
6-401-91	Hwy. 401 and Leslie St., fixed time.
6-10-96	Hwy. 10 at Nanwood Dr., Brampton, fully actuated.
6-10-113	Hwy. 10 and Burnhamthorpe Rd., fully actuated and fixed time.
6-401-151	Hwy. 401, Reconstruction traffic signals, fixed.
6-122-158	Hwy. 122 and Truscott Rd., fixed time.
6-5-159	Hwy. 5 at Mavis Rd., west of Cooksville, fully actuated.
6-7-162	Hwy. 7 and Second Line Rd. (Chinguacousy Twp.), fully actuated.
6-5-163	Hwy. 5 and Credit Woodlands St., fully actuated.
6-2-165	Hwy. 2 at Church St., Pickering, fully actuated.
6-27-166	Hwy. 27, Nobleton, fully actuated.

## DISTRICT 7—PORT HOPE

7-35-12	Hwy. 35, Coboconk (temporary), fixed time.
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## DISTRICT 8—KINGSTON

8-2-2	Hwy. 2, Trenton air base, fixed time.
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## DISTRICT 17—SUDBURY

17-68-3	Hwy. 68, north and south of Little Current swing bridge.
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## SIGN LIGHTING

## Installations Put into Operation

April 1, 1965-March 31, 1966

## DISTRICT 4—HAMILTON

4-405-15	Q.E.W. and St. Davids Rd., (9) 8 ft. fluorescent fixtures.
4-Q.E.W.-403-17	Hwy. 403 and Q.E.W. to Aberdeen, (10) 8 ft. fluorescent fixtures; (10) 6 ft. fluorescent fixtures.
4-5-6-23	Hwys. 5 and 6, Clappisons Corners, (4) sign lights on "Keep Right".
4-6-403-24	Hwy. 6 and North Cliff at Hwy. 403, (2) sign lights on "Keep Right".
4-25-25	Hwy. 25 and Guelph Line, (10) 8 ft. fluorescent fixtures; (10) 6 ft. fluorescent fixtures.
4-0-26	Garden City Skyway, (4) 6 ft. fluorescent fixtures.

## DISTRICT 6—TORONTO

6-401-28	Hwy. 401, 400 Cloverleaf, (60) 4 ft. fluorescent fixtures; (8) 6 ft. fluorescent fixtures.
6-401-29	Hwy. 401, Jane Cloverleaf, (54) 4 ft. fluorescent fixtures.

401-30	Hwy. 401, Keele Cloverleaf, (66) 4 ft. fluorescent fixtures; (12) 6 ft. fluorescent fixtures.
401-67	Hwy. 401, C.N.R. Overpass (temporary); (10) 6 ft. fluorescent fixtures.
401-89	Hwy. 401, Spadina Cloverleaf, (40) 4 ft. fluorescent fixtures; (4) 6 ft. fluorescent fixtures.
401-90	Hwy. 401, Avenue Rd. Cloverleaf, (20) 4 ft. fluorescent fixtures.
401-92	Hwy. 401, Woodbine (temporary); (2) 6 ft. fluorescent fixtures.
27-76	Hwy. 27, Dixon Rd., (2) 6 ft. fluorescent fixtures.
401-77	Hwy. 401, Yonge St. to Avenue Rd., (42) 4 ft. fluorescent fixtures.
401-78	Hwy. 401, Renforth Dr., (4) 6 ft. fluorescent fixtures.

## DISTRICT 9—OTTAWA

MC-12	Macdonald-Cartier and Sioux Dr., (3) 6 ft. fluorescent fixtures; (2) 8 ft. fluorescent fixtures; (1) 8 ft. fluorescent fixture.
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## FLASHING BEACONS

## Installations Put into Operation

April 1, 1965- April 1, 1966

## DISTRICT 1—CHATHAM

21-401-25	Hwys. 401 and 21, (2) amber on warning signs.
401-38	Hwy. 401 and Highgate Rd., (2) amber on warning signs.
40-39	Hwy. 40 and Plank Rd., (2) red on pedestal.
401-41	Hwy. 401, Maidstone, (4) amber on warning signs.
18-42	Hwy. 8, Turkey Creek, (4) amber on warning signs.

## DISTRICT 2—LONDON

2-86-46	Hwy. 86 and Co. Rd. 12, (1) red on pedestal.
2-83-47	Hwy. 83, west of Exeter, (2) amber flasher signals.
2-3-48	Hwy. 3, Delhi, (4) amber flasher signals.
2-59-49	Hwy. 59, Woodstock, (1) amber flasher signal.
2-23-50	Hwy. 23, Listowel, (2) amber flasher signals.

## DISTRICT 3—STRATFORD

3-86-28	Hwy. 86 and Huron Rd. 12, (1) red on pedestal.
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## DISTRICT 4—HAMILTON

4-6-403-99	Hwy. 403 and 6 at Northcliff, (2) amber flasher signals.
4-20-110	Hwy. 20, 800 ft. south of Green Mountain Rd., (1) amber flasher signal.
4-20-116	Hwy. 20 and Lincoln Co. Line, (2) amber flasher signals.
4-5-119	Hwy. 5 and Tansley Bridge, (2) amber flasher signals.
4-Q.E.W.-120	Q.E.W. and Guelph Line, (3) amber flasher signals.
4-0-120	Bailey bridge, (2) amber flasher signals.

## DISTRICT 5—OWEN SOUND

5-89-10	Hwy. 89, Alliston, (1) red on pedestal.
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## DISTRICT 6—TORONTO

6-10-86	Hwy. 10, north and south C.P.R. (Cooksville), (2) sign light; (2) amber on warning signs.
6-9-96	Hwy. 6 and Schomberg, (1) sign light; (1) amber on warning signs.
6-47-99	Hwy. 47 Mathews Corners, (2) sign light; (2) amber on warning signs.
6-12-100	Hwy. 12, south of Derryville, (1) sign light; (1) amber on warning sign.
6-10-101	Hwy. 10, south of Burnhamthorpe, (1) sign light; (1) amber on warning sign.



6-27-102	Hwy. 27, northbound (slip off) Etobicoke Dr., (1) sign light; (1) red on pedestal.
6-27-103	Hwy. 27, southbound (slip off) Municipal Dr., (1) sign light; (1) red on pedestal.
6-7-104	Hwy. 7, Brock Rd., Brougham, (2) sign lights; (2) red on pedestal.
6-69-105	Hwy. 69, Ontario Co. Line No. 18, (2) sign lights; (2) red on pedestal.

#### DISTRICT 7—PORT HOPE

7-7-33	Hwy. 7, Emily Park, (1) sign light; (1) amber flasher.
7-7B-34	Hwy. 7B, Chemgun, (1) sign light; (1) red on pedestal.

#### DISTRICT 9—OTTAWA

9-17-32	Hwy. 17 and Old Hwy. 17, (1) amber flasher signal.
9-62-36	Hwy. 62, west of Pembroke, (2) amber flasher signals removed.
9-2-37	Hwy. 2, Main and Queensway, (4) amber flasher signals; (3) red on pedestal.

### FORESTRY AND LANDSCAPE SECTION

The planting of trees and shrubs on new contracts again contributed substantially to the Forestry and Landscape operation. This included the planting of 58,735 trees and shrubs throughout fifteen districts.

The normal tree planting was augmented by the use of the Department's "Tree Saver" machine to relocate large trees prior to reconstruction. A total of 1,373 large trees were relocated throughout six districts in Southern Ontario with the largest projects taking place in Toronto District where 945 trees were relocated.

Grass seeding operations totalling 18,488,800 square yards was completed by both day labour and special seeding contracts. Special seeding contracts were awarded for 7,347,120 square yards which included placing jute matting for erosion control.

The results from the weed and brush spraying operations have been greatly improved with the use of the new type hydraulic boom sprayer. A total of 10,135 miles were sprayed throughout the eighteen districts. Soil sterilant spraying around guide rails was also carried out in six districts.

The District forestry crews throughout the nine Southern Districts removed 8,420 dead and dangerous trees. Numerous diseased Elm trees were removed by commercial contracts in an endeavour to halt the spread of the Dutch Elm disease. Permits were issued to Utility Companies for the removal of 1,155 trees which were considered to be a hazard to their lines.

### INSPECTION AND MAINTENANCE OF BRIDGES

During 1965 approximately one third of all structures on main highways and secondary roads were inspected by the staff of the Bridge Maintenance Section. It was through this program that structural weaknesses were discovered and recommendations made for repair or replacement.

Excessive spring run-off combined with very low water level of Lake Erie resulted in removal of some piling of the Big Creek trestle bridge at Pine Point on Highway 59. Without disruption of traffic it was possible to drive new piles, reinforce the pile cap and place rockfilled gabions at the approaches to withstand another serious run-off.

New concrete decks were placed by contract on the Landons Bay Bridge on

Highway 401 near Gananoque and by District Forces on the Ausable River Bridge on Highway 83 in the Stratford District.

An underwater investigation of various structures revealed serious deterioration of the foundation concrete of the Trent Canal Bridge at Bobcaygeon. A contractor specialized in placing concrete under water was engaged to make the necessary repairs.

At Jessie Creek on Secondary Highway 583 south of Hearst, two structures were so deteriorated that replacement was necessary. The District Forces by means of Contract Rental diverted the stream, thus by-passing both structures which were demolished and fill placed to the road grade. This entire work cost less than the replacement cost of one bridge.

At the LaValle River crossing on Secondary Highway 602 in Kenora District, the existing structure was demolished and replaced with a new structure by the District Forces.

The Bridge Inspection and Maintenance Section designed about 10 temporary detour structures consisting of Bailey Bridges. This section also acted as adviser to many municipalities concerning their bridge maintenance problems.

It has become the Department policy to waterproof all concrete decks which are covered with asphalt paving. This program was continued this year on various bridges throughout the province as part of re-paving contracts. It is expected that the waterproofing will extend the life of the concrete which is subject to the deterioration of numerous freeze-thaw cycles and the action of de-icing salts.

Steel bridge and handrail painting has become a major annual operation. During this year 36 bridges including 25,500 lineal feet of bridge handrail were painted by contract and by Department Day Labour forces.

## MATERIALS AND TESTING DIVISION

### A. Rutka, P.Eng., Materials and Testing Engineer

The Materials and Testing Division works very closely with all of the Branches in the Department. It provides a technical service for planning, design, construction and maintenance of highways, and specifically its responsibilities are as follows:

1. to test materials to determine their quality, suitability and compliance with specifications.
2. to provide an inspection service at manufacturers' plants.
3. to investigate and evaluate new materials, products and methods to determine their value for highway use.
4. to undertake field investigations and to provide data for pavement and foundation designs.
5. to provide technical guidance and general supervision in quality control operations.
6. to train construction and inspection staff in field testing and in quality control procedures.
7. to assist the Research Branch in developing and carrying out research projects.

The Division has offices and laboratories at Downsview and at all regional locations. The central laboratory at Downsview, in addition to performing the routine tests for the Toronto Region, carries out all of the development and evaluation of many materials and manufactured products of potential use to the Department.

The Division has 6 engineering sections, namely soils, foundations, materials, chemical, laboratory and office engineering. While the work in each section is specialized, the work of the Division may be grouped into the following categories:

1. pre-engineering.
2. quality control and contract inspection.
3. physical and chemical evaluation and testing.
4. special investigations.
5. training.

### Pre-Engineering

Pre-engineering involves the accumulation and analysis of data for the preparation of contract estimates. Soils, granular, geophysical, airphoto interpretation and foundation investigations are carried out during the pre-engineering stages and comprehensive reports indicating pavement and foundation designs for the road and bridge offices are prepared. The pavement designs are to a large degree based on past pavement performance on similar soil conditions and the performance of many miles of road are reviewed each year. The Benkelman Beam is now used extensively to evaluate the strengthening requirements of existing pavements.

The Division continued the use of the Seismic Unit in relatively inaccessible areas where borings with power equipment were not feasible, primarily to obtain the depths of overburden and to determine the rock types. A total of 19 seismic investigations were completed with a total of 35 miles of profile. Airphoto interpretation investigations were increased over the previous year. Airphotos are primarily used to locate borrow and granular materials where no soils or geological reports are available and

to make a preliminary assessment of the terrain as a guide to detailed field studies. A total of 59 projects were investigated covering 2,300 square miles of terrain.

A total of 231 soils design reports for King's Highways were prepared, covering a distance of 765 miles and 52 reports for Municipalities, covering 200 miles. In addition, 37 reports were prepared for patrol garage sites.

The foundation investigations for bridge sites and high embankments are carried out from the central office. The work load continued to be more extensive than that which could be handled by the staff and several projects were assigned to consultants. The details of the foundation investigations are shown in Table I.

**TABLE I**  
**Foundation Investigations**

	SECTION	CONSULTANTS
Structures (King's Hwys.).....	91	36
Structures (municipal).....	1	—
Stability investigations.....	4	—
Field tests and instrumentations.....	9	—
Patrol yard garages.....	16	3
	<u>121</u>	<u>39</u>
<b>Drilling</b>		
Drilling in soil.....	24,410 ft.	8,850 ft.
Drilling in rock.....	1,095 ft.	1,123 ft.
Dynamic core penetration.....	10,875 ft.	5,650 ft.

The following laboratory tests were performed on 5,566 samples submitted to the laboratory by the foundation section:

Grain-size distribution.....	1,208
Liquid and plastic limit.....	2,247
Moisture control.....	4,383
Density.....	1,101
Unconfined compression.....	950
Triaxial.....	112
Vane.....	202
Effective stress (base test).....	5
Effective stress (needle test).....	5
Consolidation.....	52
Specific gravity.....	24
Organic tests.....	110
Torvane test.....	88
Core penetration.....	50
	<u>10,566</u>

The engineering office analyzes the pre-engineering granular test results and maintains an inventory of all the known pits and quarries in the Province. There are 13,199 pits recorded on the inventory and it provides information on the quality and quantity of each source. This office also prepares strip maps for contract purposes and during the year 139 strip maps were prepared.

#### Quality Control and Inspection

The Regional staff provided technical assistance to the District and Municipal staff on grading, bituminous and construction projects. The Soils staff usually visited the work on an as required basis whereas the Concrete and Bituminous staff visited the



work on a regular and frequent basis. Each District has their own inspectors and small laboratories to perform the routine testing necessary for the acceptance of the work and they are guided by the Regional staff who undertake the more complex testing operations.

The Division provides and staffs mobile laboratories for concrete paving work, for bituminous compaction control and for soils work when the contracts are concentrated and a fast testing service is required. Through the research work conducted last year, it was found that the bituminous nuclear density unit could produce quick and reproduceable reliable results and it is planned to obtain at least one such unit for each regional mobile bituminous laboratory.

All of the concrete ready mix plants were inspected and rated during the year. The rating system developed provides a guide as to the amount of inspection that is required by the inspectors when the concrete is used on department work. All of the asphalt plants were also inspected and the deficiencies brought to the attention of the owners. It is the usual practice to inspect the asphalt plants in the fall to give the contractors the opportunity to make the necessary adjustments during the winter period.

The Materials Section assisted in the preparation of the revised bituminous specification Form 310 and also in separating the material specifications from the construction specifications for concrete and bituminous aggregates.

Because of the continuing concrete bridge deck deterioration problem, all bridge decks for the first time will be designed of exposed concrete instead of bituminous surfacings. Considerable effort had been devoted in trying to obtain smooth bridge deck finishes. The study on bridge deck finishes is continuing and in order to determine the degree of smoothness that is being achieved, precise levels, as well as profilometer measurements were taken on all exposed decks laid during the year. Considerable improvement in bridge deck finishes can still be made.

Good results were generally obtained with the automatic screed on the bituminous spreaders and it is therefore proposed to continue with the automatic screed requirements on many projects where more than one bituminous layer is required.

Performance ratings on recent bituminous pavements were carried out for the purposes of placing the data on punch cards. Inspection and technical assistance was provided on 186 grading and drainage projects, 165 paving projects, 105 structural projects and on 70 miles of concrete paving.

TABLE II

	CENTRAL LAB.	REGIONAL LAB.
Soils and Aggregates.....	13,576	6,041
Petrographic Examinations.....	3,129	—
Post-sulphate Examinations.....	2,453	—
Concrete mix designs.....	291	—
Concrete cylinder tests.....	11,611	10,784
Concrete beam tests.....	803	322
Cement samples.....	250	—
Chemical admixtures.....	54	—
Examinations of hardened concrete.....	122	—
Bituminous mix designs.....	56	178
Bituminous plant checks.....	784	1,869
Extraction tests.....	1,110	3,799
Asphalt samples.....	3,445	—

### Physical and Chemical Testing and Evaluations

The central, regional, temporary and mobile laboratories perform testing on materials

to determine conformance to specifications and to maintain quality control of these materials. The volume of testing for some of the major items is shown in Table II.

The five mobile bituminous compaction control units performed 453 compaction checks, 344 plant checks and 1432 extraction and gradation tests.

Manufactured products received increased attention over the previous year. A total of 223 plant inspections were performed and 1413 samples of a variety of products were tested. These products included such items as pre-stressing wire strands, grader and snowplow blades and shoes, concrete and corrugated metal pipe, catch basins, joint sealers, concrete poles and aluminum sign structures.

The chemical testing is undertaken at the Central Laboratory. In addition to carrying out routine testing on a variety of materials, the section carries out a number of evaluations on products, both in the field and in the laboratory. An increasing amount of time is being spent on the inspection and testing of water wells that are alleged to have been contaminated with winter maintenance salt or calcium chloride used as a dust palliative.

The extent of the testing and evaluations are shown in Table III.

TABLE III

MATERIALS TESTED	NO. OF SAMPLES	EVALUATIONS (FIELD AND LABORATORY)
Antifreezes	7	Green handrail paint
Blankets	1	Coatings for steel posts
Bridge Primers	73	Metallizing and Galvanizing
Bridge Paints	51	Picnic Table Treatments
CaCl <sub>2</sub> Solutions	65	Clear Sign Coatings
Cement	65	Protection of Galvanized Surfaces
Concrete Admixtures	18	Edge Sealers for Signs
De-Icers	15	Coatings for tunnels
Deodorizers	9	Luminaires
Equipment Paint	48	Safety Cones
Flag Materials	20	Safety Helmets
Fluorescent Sheeting	14	Fluorescent Sheetings
Fuel Oils	9	Coatings for Sander Boxes
Grass Seed	7	Overlaid Coloured Plywood
Guide Rail Paint	14	Bridge Paint Systems
Herbicides	12	Fluorescent Sheetings
Luminaires	2	Fluorescent Fabrics
Paint Brushes	12	Transfers
Reflectorizing Beads	27	Thermoplastic Pavement Markers
Salt	54	Water Filters
Oil	257	Bailey Bridge Coatings
Safety Helmets	38	
Safety Clothing & Fabrics	19	
Safety Cones	16	
Sign Paints	73	
Steel	4	
Traffic Paints	414	
Thinners	28	
Trappaulins	15	
Varnishes & Drying Oils	16	
Warning Lights	7	
Well Waters	134	
Water for Concrete	14	
Miscellaneous	97	
	1655	

### Special Investigations

When a problem is common throughout most of the Province, staff is assigned to it in order to find an answer as quickly as possible. These problems continue to grow in number and magnitude.

Some of the projects are carried out under the direction of the Research Branch and others by the Materials and Testing staff. The following investigations were undertaken during the year:

1. A large scale laboratory programme was carried out to determine if additives would be effective in preventing stripping of asphalt in asphaltic concrete.
2. The laboratory designed and controlled emulsion stabilized sand mix bases and checked for quality control on all bituminous layers on the experimental pavement section on Hwy. 10 north of Brampton.
3. Pavement surveys, sampling and testing were carried out on 5 thin overlay types laid as a test section on Hwy. 401 west of Tilbury. This experiment was initiated to determine the effectiveness of the thin overlay treatment for rough and stepped concrete.
4. Fifty bridge deck bituminous surfaces were sampled and tested to determine the type of future design improvements that should be considered.
5. The field investigations of structures showing signs of alkali-carbonate reaction in the Huntsville and Orillia areas had commenced. As a result of the previous work on this subject it was possible to isolate layers in certain quarries involved that were causing the problem.
6. The evaluation of joint sealing compounds was completed and in general it was found that none of the poured joint sealers are satisfactory for department pavement work.
7. Curing and sealing compounds were evaluated and a material specification (Form 1315) was prepared. A number of commercial materials were tested with a view towards permitting the curing compounds as an alternative to membrane curing.
8. The preformed neoprene seal is under study. In some cases the seal is pushed up at the expansion joints and in other cases it drops down into the joint. During the fall of 1965, expansion joints were completely eliminated from all concrete paving work. The performance of the large seals in bridge joints is under study.
9. A few trial runs have been made by the computer on the quality control programme developed to provide rapid statistical quality control service. As a number of problems still exist with the programme, it has not been put into routine operation.

A number of reports were prepared during the year. Some of these were presented as papers to technical associations. These are as follows:

1. Beneficiation of aggregates by jigging.
2. Distribution, Characteristics and Basic Properties of Cherts in Southwestern Ontario.

- 3. Evaluations of Thin Hot-Mix Surfacing used on Ontario Highways.
- 4. Experiences with the Seismic Unit.

Training

During the winter period, most of the Materials and Testing staff are engaged on various training courses, sponsored by the Training Committee, for construction and Municipal staff. The number of courses is increasing each year reflecting an interest and a need for training on testing and quality control operations. The airphoto interpretation course was held again for the third successive year. The Regional staff, in addition to providing instructions at the training centre at Downsview, also held seminars at the District level for construction staff to familiarize them with revisions to specifications and with new construction materials and methods.

MUNICIPAL ROADS DIVISION

J. P. Howard, P.Eng., Municipal Engineer

The 1965 subsidizable expenditures by the municipalities increased by approximately \$8,400,000.00 over 1964 and by \$114,496,000.00 over 1956, as shown in the following table:

EXPANSION OF AID TO MUNICIPALITIES (IN \$1,000's)				
YEAR	TOTAL EXPENDITURE BY MUNICIPALITIES	SUBSIDIES UNDER THE HIGHWAY IMPROVEMENT ACT	DEVELOPMENT ROAD EXPENDITURES	TOTAL AID
1956.....	\$ 92,048	\$ 46,005	\$ 4,732	\$ 50,737
1957.....	101,871	51,484	5,783	57,267
1958.....	108,620	54,025	6,927	60,952
1959.....	124,391	62,362	7,880	70,242
1960.....	140,438	70,444	8,135	78,759
1961.....	142,010	71,542	7,786	79,328
1962.....	151,686	76,231	7,718	83,949
1963.....	173,693	88,041	11,109	99,150
1964.....	198,155	97,300	14,455	111,755
1965.....	206,544	102,656	17,073	119,729

SUBSIDIES SECTION

J. A. Ward, P.Eng., Subsidies Engineer

77 Municipalities and 44 Indian Reserves received subsidy under The Highway Improvement Act for expenditures made in 1965. The aggregate amounts were as follows:

	ROAD MILEAGE	APPROVED APPROPRIATION	APPROVED EXPENDITURES	SUBSIDY
Metro Toronto:				
Roads.....	362.6	40,000,000	36,309,583	18,154,792
Subway.....	—	25,000,000	10,402,103	3,467,367
Counties*.....	9,200.5	46,415,700	42,002,955	23,261,397
Townships**.....	48,843.5	66,642,903	57,009,417	33,473,942
Urban.....	10,104.2	83,532,461	60,819,523	24,298,708
TOTALS.....	68,510.8	261,591,064	206,543,581	102,656,206

\* Includes Suburban Commissions.  
\*\* Includes Improvement Districts and Indian Reserves.



## METROPOLITAN TORONTO

(Part XII-A, The Highway Improvement Act)  
(Municipality of Metropolitan Toronto Act)

An amendment to The Highway Improvement Act passed in 1963 authorized the payment of subsidy at the rate of  $33\frac{1}{3}\%$  on expenditures for subway right-of-way construction made on or after April 1st, 1964, on the Bloor-Danforth Subway. Expenditures approved and subsidies paid for this work in 1964 and 1965 were as follows:

YEAR	APPROVED EXPENDITURE	SUBSIDY PAID
1964.....	\$17,375,569	\$5,791,856
1965.....	10,402,103	3,467,367
TOTALS.....	\$27,777,672	\$9,259,223

Subsidizable expenditures made by Metropolitan Toronto for road and bridge work pursuant to The Municipality of Metropolitan Toronto Act were less than those of 1964 by approximately \$2,500,000.

A breakdown of the 1965 expenditures follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$23,979,215	\$2,643,503	\$26,622,718
Bridges and culverts.....	6,331,102	244,607	6,575,709
Winter control.....	—	3,111,156	3,111,156
TOTAL APPROVED EXPENDITURES.....	\$30,310,317	\$5,999,266	\$36,309,583

The following works formed a major part of the expenditure in 1965:

Structures completed.....	3
Structures under construction.....	12
Elevated Structures: (F. G. Gardiner)	
Under construction.....	1.0 mile
Road Construction:	
Completed (Don Mills Ext., Spadina Expressway).....	2.82 miles
Under construction (Don Valley Parkway Spadina Expressway).....	8.25 miles
Existing Roads:	
Reconstructed.....	9.62 miles
Under construction.....	1.84 miles
Pavement Widening:	
Under construction.....	3.00 miles
Resurfacing of existing pavements.....	2.30 miles
Interchanges under construction.....	1
Bridge widenings—Completed.....	2
Intersection Improvements: Completed.....	13
Under construction.....	1

## COUNTY ROADS

(Part VII, The Highway Improvement Act)

The 1965 expenditures on County and Suburban roads showed an increase over 1964 figures of close to \$5,000,000 or a percentage increase of approximately 13%. Construction expenditures increased by 16% and maintenance expenditures by 7%. Winter control expenditures increased by approximately \$700,000 which constituted practically all of the total maintenance increase.

A breakdown of the 1965 expenditures follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$21,794,374	\$ 9,460,949	\$31,255,323
Bridges and culverts.....	7,164,971	368,094	7,533,065
Winter control.....	—	3,214,567	3,214,567
TOTAL APPROVED EXPENDITURES.....	\$28,959,345	\$13,043,610	\$42,002,955

Some understanding of the type and magnitude of the work represented by these figures can be gained from the following summary of the principal items of work performed by the Counties and Suburban Commissions.

#### CONSTRUCTION ITEMS

1. Roads:	
New or rebuilt gravel and stone surfaces.....	727 miles
Low cost bituminous surfaces.....	125 miles
High cost bituminous surfaces.....	179 miles
Graded to standard cross-section.....	352 miles
2. Bridges and culverts:	
Bridges (10' span and over)—concrete—87; steel—16; timber—3.	
TOTAL.....	106
Culverts (under 10' span)—concrete—22; steel—40.	
TOTAL.....	62
3. Pipe culverts installed.....	3,021

#### MAINTENANCE ITEMS

1. Surface and drainage:	
Roadside ditching.....	135 miles
Bituminous surface treatment.....	671 miles
Dust laying—with oil.....	442 miles
with calcium chloride.....	1,896 miles
Resurfacing—crushed gravel.....	556,902 cu. yds.
crushed stone.....	136,472 cu. yds.
pit-run gravel.....	107,801 cu. yds.
2. Winter control—snow removed.....	9,330 miles
snow fence erected.....	1,514 miles
3. Weed and brush control—by spraying.....	6,316 miles
by cutting.....	6,105 miles
4. Bridges repaired.....	92
Culverts repaired.....	237

### COUNTY SUBURBAN ROADS

(Part VIII, The Highway Improvement Act)

Thirty-five cities and separated towns in the Province have joined their neighbouring counties to form Suburban Roads Commissions. These Commissions have assumed portions of the county road systems of special interest to the cities and separated towns. Their 1965 mileages, expenditures and government aid are shown below.

COUNTY	SUBURBAN ROAD COMMISSION	MILEAGE	APPROVED EXPENDITURE	GOVERNMENT SUBSIDY
Brant.....	Brantford.....	52.5	\$ 246,494.14	\$ 128,169.87
Carleton.....	Ottawa.....	108.7	1,191,401.12	613,965.09
	Eastview.....	2.6	8,581.88	4,304.31
Elgin.....	St. Thomas.....	25.0	25,926.48	13,375.67
Essex.....	Riverside.....	4.0	23,017.00	11,508.50
	Windsor.....	49.0	356,791.77	178,854.24
Frontenac.....	Kingston.....	21.1	156,835.08	80,220.74
Grey.....	Owen Sound.....	25.5	65,192.65	32,790.43
Hastings.....	Belleville.....	16.2	66,144.24	33,290.78
Kent.....	Chatham.....	31.5	112,332.84	56,228.37
Lambton.....	Sarnia.....	25.5	402,333.61	201,291.04
Lanark.....	Smiths Falls.....	11.0	15,387.93	7,722.08
Leeds and Grenville.....	Brockville.....	18.4	39,274.86	20,093.65
	Gananoque.....	6.7	19,148.63	9,597.69
	Prescott.....	2.8	11,839.49	5,952.22
	Smiths Falls.....	5.2	17,915.81	9,046.43
Lincoln.....	St. Catharines.....	46.8	261,597.57	138,463.31
Middlesex.....	London.....	67.6	547,876.38	343,747.31
Northumberland and Durham.....	Trenton.....	12.7	40,911.78	20,934.87
Ontario.....	Oshawa.....	35.2	292,978.65	162,894.80
Oxford.....	Ingersoll.....	4.5	2,796.52	1,398.26
	Woodstock.....	9.4	16,448.32	8,477.83
Perth.....	St. Marys.....	6.4	15,848.00	7,924.00
	Stratford.....	23.1	74,932.69	37,689.56
Peterborough.....	Peterborough.....	50.8	189,418.88	97,156.36
Simcoe.....	Barrie.....	18.2	42,121.06	21,752.95
Stormont, Dundas and Glengarry.....	Cornwall.....	61.1	123,496.40	63,735.84
Waterloo.....	Galt.....	33.9	81,554.84	42,230.01
	Kitchener.....	60.1	321,051.43	174,498.43
	Waterloo.....	23.0	162,319.39	82,256.23
Welland.....	Niagara Falls.....	27.8	198,838.02	103,746.53
	Welland.....	16.4	116,666.31	59,063.98
Wellington.....	Guelph.....	35.3	71,785.72	36,096.78
Wentworth.....	Hamilton.....	167.8	899,846.96	467,736.51
York.....	Toronto-York.....	195.5	3,057,002.57	1,637,623.92
TOTALS.....		1,301.2	\$9,276,109.02	\$4,913,838.59

## INCORPORATED TOWNSHIPS

(Part IX, The Highway Improvement Act)

572 Townships, 17 Improvement Districts and 44 Indian Reserves received aid under this part of the Act in 1965. The expenditures made by these 633 road authorities showed an increase over 1964 expenditures of approximately \$3,800,000 with corresponding increase of government subsidy of approximately \$2,200,000. Winter control expenditures increased by close to \$1,400,000 and accounted for approximately 37% of the total increase.

A breakdown of the 1965 expenditures follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$21,024,139	\$22,609,089	\$43,633,228
Bridges and culverts.....	6,350,634	893,458	7,244,092
Winter control.....	—	6,132,096	6,132,096
TOTAL APPROVED EXPENDITURES.....	\$27,374,773	\$29,634,643	\$57,009,416

These expenditures provided for the following major items of work:

## CONSTRUCTION ITEMS

1. Roads:	
New or rebuilt gravel and stone surfaces.....	1,270 miles
Low cost bituminous surfaces.....	289 miles
High cost bituminous surfaces.....	147 miles
Graded to standard cross-section.....	1,703 miles
2. Bridges and culverts:	
Bridges (10' span and over)—concrete-433; steel-34; timber-23.	
TOTAL.....	490
Culverts (under 10' span)—concrete-53; steel-283; timber-63.	
TOTAL.....	399
3. Pipe culverts installed.....	8,456

## MAINTENANCE ITEMS

1. Surface and drainage:	
Roadside ditching.....	2,038 miles
Bituminous surface treatment.....	805 miles
Dust laying—with oil.....	2,523 miles
with calcium chloride.....	11,151 miles
Resurfacing—crushed gravel.....	3,584,063 cu. yds.
crushed stone.....	1,808,657 cu. yds.
pit-run gravel.....	1,093,843 cu. yds.
2. Winter control—snow removed.....	49,809 miles
snow fence erected.....	3,240 miles
3. Weed and brush control—by spraying.....	19,978 miles
by cutting.....	22,277 miles
4. Bridges repaired.....	588
Culverts repaired.....	5,020

## CITIES, TOWNS AND VILLAGES

(Part X, The Highway Improvement Act)

For the second consecutive year the expenditures made by the 348 Urban Municipalities showed the highest rate of increase over previous year's expenditures. The 1965 expenditures totalled \$60,819,523 an increase of approximately \$9,154,000 or a percentage increase of approximately 17.7%.

A breakdown of the expenditures made by 32 cities, 7 separated towns, 150 towns and 159 villages follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$31,205,731	\$18,738,319	\$49,944,050
Bridges and culverts.....	1,140,371	508,224	1,648,595
Winter control.....	—	9,226,878	9,226,878
TOTAL APPROVED EXPENDITURES.....	\$32,346,102	\$28,473,421	\$60,819,523

A chronological summary of urban expenditures and provincial aid, and a table of street mileages by type of surface is included in the appendix.



## DIRECT EXPENDITURES SECTION

P. D. Patterson, P.Eng., Direct Expenditures Engineer

### DEVELOPMENT ROADS

*(Part XI, The Highway Improvement Act)*

During the fiscal year, the County Road Needs Study was completed. The financial arrangements emanating from this study were effectively implemented consistent with the plan of action adopted for the 1965-69 programme period.

At the same time supplementary assistance in the form of development road aid to townships were continued and the extension of this concept to towns and villages in the territorial districts was made possible by a legislative amendment to this Part of The Highway Improvement Act.

\$17,072,778.09 was spent on 176 development road designations applying to 966.2 miles of roads under the jurisdiction of eligible municipalities. 34 projects covering 137.0 miles of road were completed and the designations revoked. 36 new designations on 134.5 miles of road were made.

Locations, mileages and expenditures on development roads are shown in the appendix.

### ROADS IN TERRITORY WITHOUT MUNICIPAL ORGANIZATION

*(Part XII, The Highway Improvement Act)*

Assistance to Local Roads Boards, Statute Labour Boards and groups of settlers rendered under this Part of the Act.

The amount of contribution to Statute Labour Boards was at least equivalent to the value of the statute labour. Local Roads Boards benefit from a contribution of twice the amount of the local contribution which is derived from taxes levied on the assessed value of the land in the local area. During the year, 34 Local Roads Boards were operating and 26 new Boards were formed.

The distribution of aid by districts is listed in the following table:

# SUMMARY OF UNINCORPORATED TOWNSHIPS EXPENDITURES IN THE FISCAL YEAR 1965-66

MUNICIPAL DISTRICT	VALUE OF STATUTE LABOUR, LOCAL ROADS OR OTHER WORK PERFORMED	DIRECT EXPENDITURE ON ROADS BY DEPARTMENT	TOTAL VALUE OF WORK PERFORMED	PERCENTAGE OF AID BY DEPARTMENT
5 Muskoka.....	\$ 15,265.70	\$ 7,378.29	\$ 22,643.99	33
0 Nipissing.....	3,630.60	8,516.53	12,147.13	70
1 Huntsville and Parry Sound....	41,380.42	62,881.84	104,262.26	60
3 Nipissing.....	83,654.43	278,375.67	362,030.10	77
4 Temiskaming and Cochrane South.....	43,249.67	75,170.90	118,420.57	63
6 Cochrane North.....	55,953.60	181,251.37	237,204.97	76
7 Sudbury.....	92,133.23	176,645.93	268,779.16	66
8 Algoma.....	25,170.87	79,407.92	104,578.79	76
9 Thunder Bay.....	67,550.59	202,456.70	270,007.29	75
0 Kenora and Rainy River.....	61,747.23	82,069.45	143,816.68	57
TOTALS.....	\$489,736.34	\$1,154,154.60	\$1,643,890.94	70

## PLANS APPROVALS

1. R. Heavysege, P.Eng., Plans Approval Engineer

Plans approved during the year were as follows:

Development Roads — 48 plans.....	177 miles
By-law Construction — 156 plans.....	249 miles
TOTAL — 204 plans.....	426 miles

The above totals are somewhat less than last year's, but this can vary from year to year due to carryovers and the tendency to bigger jobs.

As the by-law plans are mostly approved by the districts, our time is absorbed in approving plans and contract documents for development roads which are generally handled by consulting engineers retained by the municipalities involved.

Development road plan approvals involve considerable liaison between the office and the consulting engineers, municipalities and district municipal personnel to ensure that the plans and documents are prepared according to development road requirements and standards.

As there are new consultants entering this field from time to time, this requires additional instruction and guidance to ensure that our procedures are followed in the preparation of plans and contract documents.

The consultants involved in this work are doing a generally satisfactory job.

**DISTRICT No. 1 — CHATHAM****F. C. Brown, P.Eng., District Engineer****CONSTRUCTION**

During 1965 work was completed on the paving of the Macdonald-Cartier Freeway to provide a four lane divided highway throughout the District. Interchanges at Highway 21 and the Highgate Side Road were brought into use. In Essex County an experimental stretch of two and one half miles of resurfacing was laid on the Freeway. This consisted of one inch thick asphalt surfacing with five different admixtures and relative performance will be subject of further study in preparation for the later resurfacing of the highway between Tilbury and Windsor.

Work on the Sarnia By-Pass was effectively completed providing a twenty-four foot pavement from the junction with Indian Road to the Modeland interchange. This highway has now been numbered Highway 40 and provision has been made in the grading for the future construction of a divided highway. Present work incorporates an overhead to the Canadian National Railway tracks. Near Courtright the Department has almost completed construction of the inlet and outlet canals for the new Ontario Hydro generating station. These introduced some unusual construction problems.

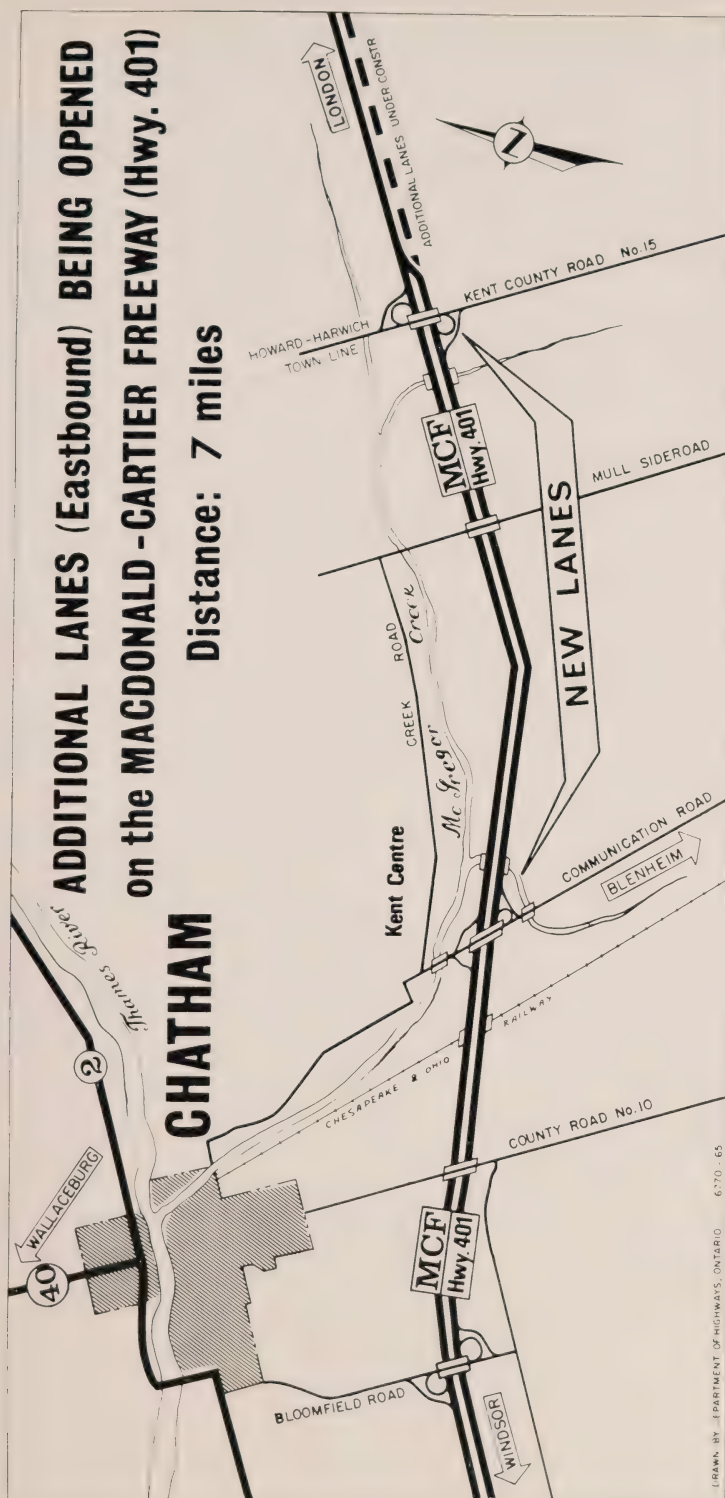
On Highway 3 work was commenced on the construction of two tunnels to carry the Simpson and Askew Drains to Lake Erie. This operation was unusual for the Department and considered to be more satisfactory than open cut construction.

In the Windsor area, work was completed on Highway 2 between the Canadian Pacific Railway tracks at the city boundary and the junction of the highway with



Hwy. 401 — West of Hwy. 21. photo 6830 — (Chatham)







Highway 98 providing a four lane undivided highway in this previously unsatisfactory section. Work was also commenced on the reconstruction of the bridge over Turkey Creek and the road through the village of LaSalle on Highway 18.

Reconstruction was commenced on Highway 18 between Kingsville and Harrow and at the close of the construction season, the only work remaining to be done was the final paving. This contract involved the use of automatic screed controls for the laying of the first binder course. The contract also incorporated the laying of three quarters of an inch of sand-asphalt course. This is a new requirement and was used on all major paving contracts during 1965.

#### MAINTENANCE

Normal summer and winter maintenance operations were carried out in the district during 1965-66.

Three crushed gravel contracts for shouldering and one hot mix patching contract were carried out. The paving of Oil City patrol yard was completed.

This year was the first year the district attempted grass mowing by renting tractors and thirteen foot mowers. This proved highly successful and we hope to continue this method by contract on the Macdonald-Cartier Freeway in the future.

1225 tree stumps and 255 trees (mainly elms) were removed by contract. Work has already started on the development and landscaping of the picnic sites adjacent to the service centres on the Macdonald-Cartier Freeway at Tilbury.

There has been a substantial increase in sign manufacture and erection over previous years, the highlight being the erection of the Macdonald-Cartier Freeway sign along Highway 401.

A bridge crew was formed this year to carry out all repairs to bridges and culverts throughout the district.

Two salt sheds were erected by our own forces and the erection of a four-bay metal garage building started on Highway 21, near Port Franks.

As always, our electrical crew have been extremely busy, having installed four sets of traffic signals, thirteen sets of illumination and five sets of flasher signals. Apart from these primary duties a considerable amount of wiring was completed in heated storage buildings, patrol offices and field offices.

Four mechanical sanders were added to the district fleet, bringing the total to eighteen. With the addition of mechanical sanders other patrol yards have been furnished with sand, stockpiled by district forces.

The district's two-way radio was enlarged by the addition of three new base stations at Belle River Road, Oldcastle and Reece's Corners patrol yards, and the installation for winter service, of two units in our larger trucks.

#### Automatic Signals at Railway Crossings

HWY. No.	RAILWAY	LOCATION	TYPE OF SIGNAL
21	C. & O.	Lot 1, Concession 5, Township of Camden Gore, County of Kent.....	2 flashing lights, 1 bell

## Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES	YEAR	MILES	THIS FISCAL YEAR	
		COMPL.	BEGUN	COMPL. PREV. YRS.	MILEAGE COMPL.	TONS PLACED
2	From intersection of Hwy. 2 and 98 to Windsor south limits.....	2.42	1964	NIL	2.42	20,247.99
2	Passing lane at entrance to Windsor city airport.....	0.49	1965	NIL	0.49	770.00
18	Through LaSalle.....	1.52	1965	NIL	NIL	313.00
18	Kingsville to Harrow.....	8.44	1965	NIL	3.80	15,583.04
18	Intersection of Hwy. 18 and Elliot Road 1.6 mi. south of the limits of the city of Windsor.....	0.39	1965	NIL	0.39	2,645.39
39	Belle River to Puce.....	3.52	1965	NIL	2.68	12,051.00
40	Clay Creek diversion 2.9 mi. north of Sombra.....	0.75	1965	NIL	0.75	2,864.93
40	Junction of Hwy. 40 and the Township Road between Sombra and Moore Townships.....	—	1965	NIL	—	169.38
40	Sarnia by-pass from Sarnia city limits at Indian Road easterly and northerly to Modeland Road interchange.....	4.61	1965	NIL	4.61	19,577.00
98	From 1.20, 4.45 and 9.12 mi. west Hwy. 98B, Queen Street, Tilbury.....	1.14	1965	NIL	1.14	3,782.87
98	Charing Cross intersection at Hwy. 98 at County Road 10.....	0.17	1965	NIL	0.17	1,328.00
01	From 8.7 mi. west of Hwy. 76 westerly 9.18 mi. to Hwy. 21 (south lanes).....	9.18	1964	NIL	—	617.31
01	Highgate interchange 4.91 mi. east of Hwy. 21.....	1.19	1965	NIL	1.19	5,189.25
01	Interchange at Hwy. 21.....	0.52	1965	NIL	0.52	5,753.00
01	Hwy. 21 westerly 11.17 mi. (south lanes).....	11.17	1965	NIL	—	352.49
01	8.03 mi. east of the junction of Hwy. 2, Tilbury, easterly 7.2 mi.....	7.20	1965	NIL	—	406.03
	TOTALS.....	52.71			18.16	91,650.68

## Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	TONS PLACED
	Various throughout district.....	623

## Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
2	From 8 mi. west of Chatham to Rochester/Tilbury North Township Line.....	1.0	990.00
3	From 8.2 mi. east of Essex to 4.9 mi. east of Wheatley.....	2.5	2,420.00
30	From the junction of Hwy. 79, Alvinston westerly 5.76 mi. to County Road 8.....	5.82	14,287.52
98	From 1.3 mi. east of Junction Hwy. 98 and Walker Road to 2.4 mi. east of the junction of Hwys. 77 and 98.....	1.8	1,750.00
01	From 1.5 mi. west of Hwy. 77 westerly 2.4 mi. (westbound lanes only).....	2.3	1,806.26
	TOTALS.....	13.42	21,253.78

## Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
2	Grand Marais Drain south of Windsor city limits.....	1964	1965	1965	Reinforced concrete, rigid frame
18	Turkey Creek—LaSalle.....	1965	—	—	Reinforced concrete, steel beam
40	Clay Creek 2.9 mi. north of Sombra.....	1964	1965	1965	Reinforced concrete, rigid frame
40	C.N.R. overhead 2.0 mi. south of Highway 402.....	1965	1965	1965	Reinforced concrete, prestressed beams
401	At Highgate Road, County Road 20, 4.91 mi. east of Hwy. 21 interchange structure	1964	1965	1965	Reinforced concrete, steel beams
401	Underpass at County Road 16, 2.3 mi. east of Hwy. 21.....	1965	—	—	Reinforced concrete, steel beam
401	At Hwy. 21 interchange, interchange structure.....	1964	1965	1965	Reinforced concrete, steel beam
401	At Essex County Road 7, interchange structure.....	1965	—	—	Reinforced concrete



Hwy. 40 — Clay Creek Bridge. 3 miles north of Sombra. photo 6823 — (Chatham)

## Concrete Base Pavement, Asphalt Top

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	THIS FISCAL YEAR		PAVEMENT WIDTH
				COMPL. PREV. YRS.	MILES COMPL.	TONS PLACED	
401	Highgate interchange leg "A" inner and outer loop, leg "C" inner loop and outer loop.....	0.64	1964	NIL	0.64	534	0-12 feet
401	Highway 21 interchange leg "A" inner and outer loop, leg "C" inner and outer loop.....	0.68	1964	NIL	0.68	534	0-12 feet
401	Howard-Harwich townline in- terchange.....	0.31	1965	NIL	0.31	157	0-12 feet
	TOTALS.....	1.63			1.63	1,225	

## Concrete Pavement

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	THIS FISCAL YEAR		PAVE. WIDTH
				COMPL. PREVIOUS YEARS	MILES COMPL.	SQ. YDS. PLACED	
401	From 8.7 mi. west of Hwy. 76 westerly 9.18 mi. to Hwy. 21 (east bound lanes).....	9.18	1964	Nil	9.18	126,234	24 ft.
401	Hwy. 21 westerly 11.17 mi. (east bound lanes).....	11.17	1964	Nil	11.17	145,349	24 ft.
	TOTALS.....	20.35			20.35	271,583	

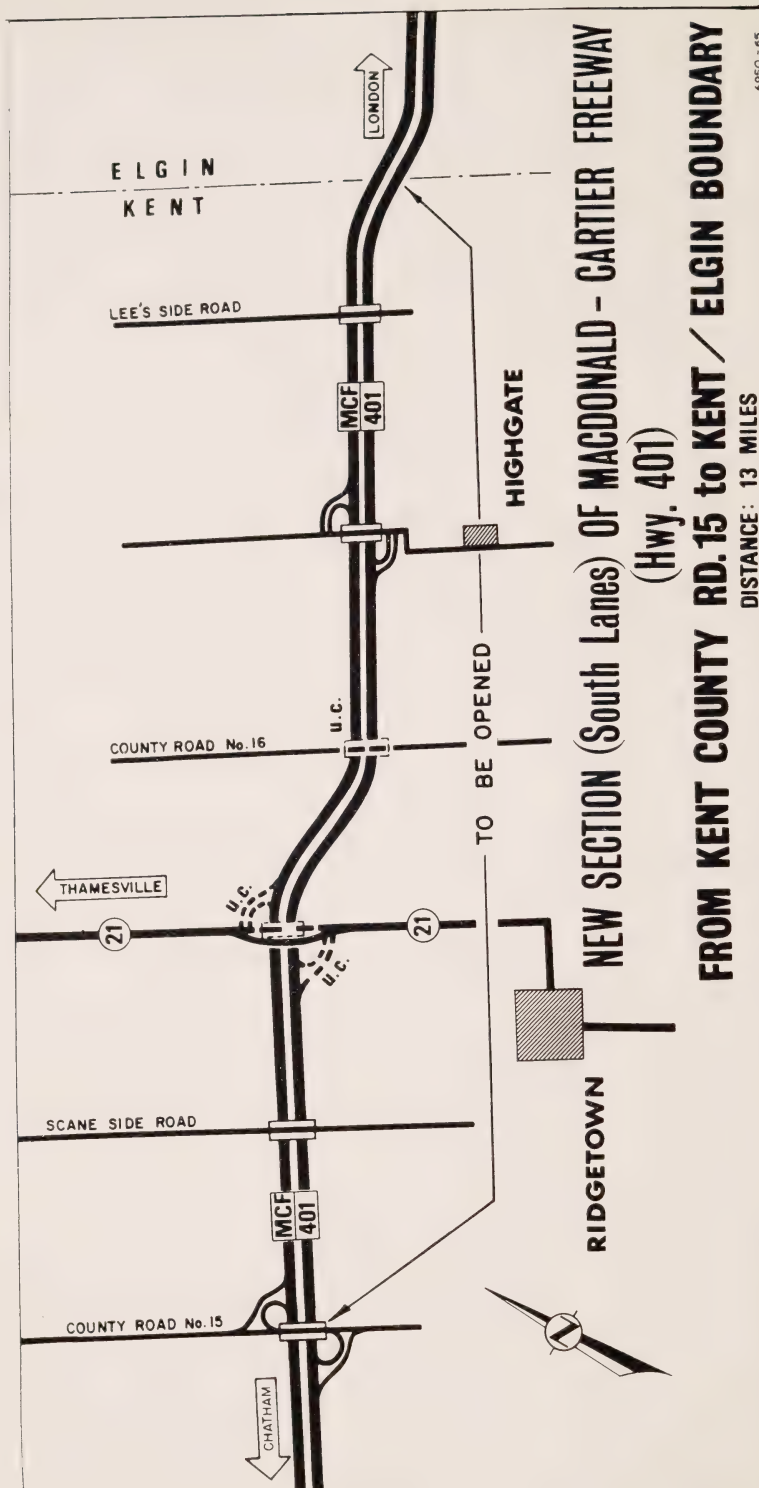
## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	From intersection of Hwys. 2 and 98 to Windsor south limits.....	2.42	4,600
2	From 8 mi. west of Chatham to Rochester/Tilbury North Township Line.....	1.0	600
2	Tilbury to Rochester/Tilbury North Township Line.....	8.0	3,900
3	From Kent/Elgin County Line westerly 6.5 mi.....	8.5	4,290
3	From 3 mi. west of Port Alma to 5 mi. east of Wheatley.....	7.0	3,600
3	From Leamington westerly for 8 mi.....	8.0	4,000
3	From 8.2 mi. east of Essex to 4.9 mi. east of Wheatley.....	2.1	1,067
21	From Wabash to Dresden.....	5.0	2,500
40	Clay Creek diversion 2.9 mi. north of Sombra.....	0.75	1,416
40	Sarnia by-pass from Sarnia city limits at Indian Road easterly and northerly to Modeland Road interchange.....	4.61	10,118
98	From 1.20, 4.45 and 9.12 mi. west of Hwy. 98B, Queen Street, Tilbury	1.14	2,944
98	From 1.3 mi. east of junction of Hwy. 98 and Walker Road to 2.4 mi. east of the junction of Hwys. 77 and 98.....	1.5	737
401	Hwy. 21 westerly 11.17 mi. (east bound lanes).....	11.17	10,005
401	From Tilbury to Ruscomb Road overpass.....	10.5	5,600
401	From 1.5 mi. west of Hwy. 77 westerly 2.4 mi. (west bound lanes only).....	2.3	3,146
	TOTALS.....	73.99	58,523

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	TONS PLACED
	Various locations by Patrols for shouldering.....	9,026





## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
2	From intersection of Hwys. 2 and 98 to Windsor (south limits).....	2.42	1964	.72	1.70
2	Passing lane at entrance to Windsor city airport.....	0.49	1965	Nil	0.49
18	Turkey Creek Bridge and Hwy. 18 through LaSalle.....	1.52	1965	Nil	58%
18	Kingsville to Harrow.....	8.44	1965	Nil	77%
18	Intersection of Hwy. 18 and Elliot Road 1.6 mi. south of the limits of the city of Windsor.....	0.39	1965	Nil	0.39
39	Belle River to Puce.....	3.52	1965	Nil	83%
40	Clay Creek Bridge 2.9 mi. north of Sombra.....	0.75	1964	.21	0.54
40	Junction of Hwy. 40 and the Township Road between Sombra and Moore Townships.....	—	1965	Nil	100%
40	Sarnia by-pass from Sarnia city limits at Indian Road easterly and northerly to Modeland Road interchange.....	4.61	1965	Nil	4.61
98	From 1.20, 4.45 and 9.12 mi. west of Hwy. 98B.....	1.14	1964	Nil	1.14
98	Charing Cross intersection at Hwy. 98 at County Road 10.....	0.17	1965	Nil	0.17
401	Highgate interchange 4.91 mi. east of Hwy. 21.....	1.19	1964	.71	0.48
401	Underpass at County Road 16 2.3 mi. east of Hwy. 21.....	0.41	1965	Nil	66%
401	Hwy. 21 interchange.....	0.52	1964	.11	0.41
401	Essex County Road 7 interchange.....	0.52	1965	Nil	31%
	TOTALS.....	26.09		1.75	9.93

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
2	From intersection of Hwys. 2 and 98 to Windsor (south limits).....	2.42	1964	0.50	1.92	139,814
2	Passing Lane at entrance to Windsor city airport.....	0.49	1965	Nil	0.49	3,670
18	Turkey Creek Bridge and Hwy. 18 through LaSalle.....	1.52	1965	Nil	1.29	42,016
18	Kingsville to Harrow.....	8.44	1965	Nil	7.25	222,336
18	Intersection of Hwy. 18 and Elliot Road 1.6 mi. south of the limits of the city of Windsor.....	0.39	1965	Nil	0.39	9,005
39	Belle River to Puce.....	3.52	1965	Nil	3.16	74,023
40	Clay Creek Bridge 2.9 mi. north of Sombra.....	0.75	1964	Nil	0.75	29,500
40	Junction of Hwy. 40 and Township Road between Sombra and Moore Townships.....	—	1965	Nil	100%	4,087
40	Sarnia by-pass from Sarnia city limits at Indian Road easterly and northerly to Modeland Road interchange.....	4.61	1965	Nil	4.61	205,577
98	From 1.20, 4.45 and 9.12 mi. west of Hwy. 98B.....	1.14	1964	Nil	1.14	33,543
98	Charing Cross intersection at Hwy. 98 at County Road 10.....	0.17	1965	Nil	0.17	2,536

401	Highgate interchange 4.91 mi. east of Hwy. 21.....	1.19	1964	1.00	0.19	60,876
401	Underpass at County Road 16 2.3 mi. east of Hwy. 21.....	0.41	1965	Nil	0.37	17,370
401	Hwy. 21 interchange.....	0.52	1964	Nil	0.52	57,998
401	Essex County Road 7 interchange.....	0.52	1965	Nil	Nil	2,007
	TOTALS.....	26.09		1.50	22.25	904,358

### New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN
2	Pike Creek patrol yard.....	Heated storage	Truck storage	1965
2	Pike Creek patrol yard.....	Salt shed	Salt storage	1965
2	Cottam Patrol Yard.....	Salt shed	Salt storage	1965

### Totals of Other Work Done

ITEMS	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	7	—	—
Calcium dust layer on gravel roads.....	Nil	—	—
Calcium for de-icing roads.....	Nil	—	—
Development roads built.....	Nil	—	—
Off-road parks maintained.....	8	—	—
Roads snowploughed and kept open, King's highways.....	21	—	771
Roads snowploughed and kept open, secondary highways.....	Nil	—	Nil
Roadside picnic places maintained.....	80	—	—
Routine maintenance, King's highways.....	21	—	771
Routine maintenance, secondary highways.....	Nil	—	—
Salt for de-icing roads (raw).....	—	8,251	771
Salt in sand, stockpiled.....	—	957	—
Sand for winter maintenance.....	—	8,526	771
Scale houses maintained.....	3	—	—
Seeding by department's forces.....(acres)	122	—	—
Shrubs received and planted this year.....	1,873	—	—
Signs erected or replaced.....	6,051	—	—
Snow fence erected, dismantled, stored.....	—	—	40
Snow hedges planted this year.....	—	—	Nil
Traffic lights installed this year.....	4	—	—
Weed control.....	—	504	499
Zone painting on King's highways.....(gals.)	—	7,956	1,141
Zone painting on secondary highways.....(gals.)	—	Nil	Nil

**DISTRICT No. 2 — LONDON****H. C. Dernier, P.Eng., District Engineer****CONSTRUCTION**

The Bridge over Big Creek at Delhi on Highway 3 was the first constructed in this district, on which the concrete deck was intended to be the wearing surface. Considerable cracking developed in the deck which seemed to be associated with the Sonovoid tubes which were included in the bridge design. The cracks were filled with Epoxy Resin. In addition to the above, structures and approaches were completed and opened to traffic on Highway 76 and the Furnival Road at grade separations crossing Highway 401. A new bridge crossing Kettle Creek in the village of Belmont was completed and opened to traffic. Reconstruction of Highway 74 to urban standards throughout Belmont Village was carried out under the same Contract.

Grading and Base paving was completed on the section of Highway 4 from Clandeboye to 4.9 miles south of Exeter.

Grading and paving were completed at the following locations: Highway 24 from 0.25 miles south of Galt south limits northerly 0.47 miles (now in District 4); Highway 59 detour, route on Tecumseh Street to Brant Street in the city of Woodstock, to provide a detour route for Highway 59 during construction in 1966, of a new bridge over the Thames River and the Canadian Pacific Railway in the vicinity of the Pittock Dam; Highway 81 from Highway 22 northerly 5.06 miles.

Resurfacing of Highway 401 was continued. The section from 1.5 miles west of Dorchester Road to the Wellington Road interchange was completed. Sand seal and



Hwy. 401 — No. 15 interchange north of Rodney. photo 7007-A — (London)



base course only was placed on the section from Wellington Road interchange to the Highway 4 interchange.

#### MAINTENANCE

Routine summer and winter maintenance was carried out as in previous years. A system of staffing snow plowing operations in which some dependence was placed on chance recall, was employed. This resulted in a somewhat smaller staff than in the previous year. The smaller staff coupled with a milder winter resulted in a reduction in winter maintenance cost of about 15%.

An extensive program of dead tree removal was carried out throughout the District resulting in the removal of all the presently dead trees in the District.

The rather extensive weed spraying program carried out in the summer of 1964 as well as 1965 has resulted in a noticeable reduction in the weed growth on the Highway right-of-ways. This in turn reduced to some extent the amount of mowing necessary.

Surface treating was carried out on Highways 80 and 97. Good results were obtained on Highway 80. Serious stripping of the stone surfacing during the winter was observed on Highway 97. The reason for this has not as yet been determined.

Grading and paving of patrol headquarters at Iona and Elginfield were carried out by contract. Special Services Section began construction of a patrol headquarters building at Elginfield to serve patrols 13 and 14.

Three new salt sheds were constructed during the winter, two for salt storage and one to serve as a heated storage building.



Hwy. 40 — At Kettle Creek. photo 7009 — (London)

Development of a picnic site at Service Centre W-6 was nearly completed during the fall of 1965. Preliminary work on development of a picnic site at Service Centre W-5 was started in the late winter.

As usual, hot mix patching was carried out by contract in scattered locations throughout the District.

Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
81	C.N.R.	Town of Strathroy—Caradoc Street.....	2 flasher lights, 1 bell

Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMP.	TONS PLACED
3	Big Creek Bridge at west limits of Delhi..	0.32	1965	Nil	0.32	454
4	From 4.9 mi. south of Exeter southerly to Clandeboye 4.7 mi.....	4.7	1965	Nil	4.7	8,620
7	Department of Hwys. patrol yard (Elgin-field) 0.8 mi. west of inter-section of Hwys. 4 and 7 (off Hwy. 7).....	—	1965	—	—	1,142
24	From 0.25 mi. south of Galt south limits, northerly 0.47 mi. including realign-ment of Waterloo County Road 17A.....	0.47	1964	Nil	0.47	2,306
59	Detour (Woodstock) along Tecumseh Street from Hwy. 59 westerly to Brant Street.....	0.43	1965	Nil	0.43	772
74	From Belmont south limits to 0.2 mi. north of Belmont north limits including Kettle Creek Bridge.....	0.98	1964	Nil	0.98	5,854
81	From Hwy. 22 northerly 5.22 mi.....	5.22	1965	Nil	5.22	12,211
401	Interchange at Hwy. 76.....	0.54	1964	Nil	0.54	5,292
401	Interchange at County Road 3 to Rodney (Furnival Road, 5 mi. west of Hwy. 76)	0.47	1964	Nil	0.47	5,195
401	Department of Hwys. patrol yard (Iona) off Elgin County Road 14, 0.3 mi. south of Hwy. 401.....	n/a	1965	—	—	1,486
Various	Various locations.....	11.15	1965	Nil	11.15	11,772
	TOTALS.....	24.28			24.28	55,104

Bituminous Prime on Gravel Roads

HWY. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
81	From Hwy. 7 southerly 7.2 mi.....	7.2	20,502	685

### Bituminous Resurfacing of Old Pavement

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
401	Macdonald-Cartier Freeway—(Hwy. 401) from 1.5 mi. west of Dorchester Road interchange, westerly 7.44 mi.....	6.51	45,091
401	Macdonald-Cartier Freeway—(Hwy. 401) from 0.44 mi. west of Wellington Road interchange westerly 5.70 mi.....	5.70	22,640
TOTALS.....		12.21	67,731

### Bituminous Surface Treatment

HWY. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BITUMULS USED	TONS CHIPS USED
80	From junction of Middlesex County Road 2 (Glencoe) northerly 5.2 mi.....	5.2	14,553	639
97	From junction Hwy. 59 to 11.5 mi. easterly.....	10.5	29,547	1,299
TOTALS.....		15.7	44,100	1,938

### Bridges Built

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
3	Big Creek Bridge at west limits of Delhi	1965	—	—	Prestressed slab
74	Kettle Creek Bridge in Village of Belmont	1964	1965	1965	Beam and slab
401	Interchange at Hwy. 76.....	1964	1965	1965	Beam and slab
401	Interchange at County Road 3 to Rodney (Furnival Road, 5 mi. west of Hwy. 76)	1964	1965	1965	Beam and slab

### Concrete Base Pavement, Asphalt Top

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR		
					MILES COMPL.	TONS PLACED	PAVEMENT WIDTH
401	Interchange at County Road 3 to Rodney (Furnival Road, 5 mi. west of Hwy. 76).....	0.47	1964	Nil	0.47	517	Varies
401	Interchange at Hwy. 76.....	0.54	1964	Nil	0.54	581	Varies
TOTALS.....		1.01			1.01	1,098	

### Concrete Pavement

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR		
					MILES COMPL.	SQ. YDS. PLACED	PAVEMENT WIDTH
401	Interchange at County Road 3 to Rodney (Furnival Road, 5 mi. west of Hwy. 76).....	0.47	1964	Nil	0.47	4,704	Varies
401	Interchange at Hwy. 76.....	0.54	1964	Nil	0.54	5,283	Varies
TOTALS.....		1.01			1.01	9,987	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
3	Big Creek Bridge at west limits of Delhi.....	0.30	3,253
4	From 4.9 mi. south of Exeter southerly to Clandeboye 4.7. mi.....	4.70	63,438
7	Department of Highways patrol yard (Elginfield) 0.8 mi. west of inter- section of Hwys. 4 and 7 (off Hwy. 7).....	n/a	3,197
24	From 0.25 mi. south of Galt south limits northerly 0.47 mi. including realignment of Waterloo County Road 17A.....	0.47	7,485
59	Detour along Tecumseh Street (Woodstock) from Hwy. 59 westerly to Brant Street.....	0.43	1,470
74	From Belmont south limits to 0.2 mi. north of Belmont north limits including Kettle Creek Bridge.....	0.98	13,486
81	From Hwy. 22 northerly 5.22 mi.....	5.28	52,500
401	Interchange at Hwy. 76.....	0.54	16,611
401	Department of Hwy. patrol yard (Iona) off Elgin County Road 14, 0.3 mi. south of Hwy. 401.....	n/a	2,640
401	From 1.5 mi. west of Dorchester Road interchange westerly 7.44 mi.....	6.51	34,508
401	Macdonald-Cartier Freeway (Hwy. 401) from 0.44 mi. west of Wellington Road interchange, westerly 5.70 mi.....	5.70	8,058
401	Interchange at County Road 3 to Rodney (Furnival Road, 5 mi. west of Hwy. 76).....	0.47	21,311
Var- ious	Various Locations.....	10.40	8,869
TOTALS.....		35.78	236,826

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	West Beachville to West Woodstock.....	—	165
4	.06 mi. north of Calamity Corners—4.41 mi.....	n/a	24
4	Exeter southerly to Centralia—3.42 mi.....	n/a	39
24	2.4 mi. west of Hwy. 3—northerly 9.4 mi.....	n/a	7.5
59	Big Creek structure.....	n/a	13.5
81	Hwy. 81—Strathroy northerly to Hwy. 22—2.74 mi.....	n/a	60
97	Plattsville easterly—6.13 mi.....	n/a	192
126	0.65 mi. north of Hwy. 401.....	n/a	7.5
401	2 mi. westerly of junction of Hwy. 401 and Hwy. 97.....	n/a	375
401	0.44 mi. west of the Wellington Road interchange westerly—5.70 mi.....	n/a	270
401	Service centre W-6—4.8 mi. east of Hwy. 76 interchange—76 mi.....	n/a	12
401	Service centre W-5—3.9 mi. east of Hwy. 76 interchange.....	n/a	3
401	12.3 mi. west of Hwy. 4 interchange—westerly 11.7 mi.....	n/a	59
TOTAL.....			1,227.5



## Grading and Culverts

Hwy. No.	LOCATION	MILES IN YEAR		MILES COMPL. PREV.	MILES COMPL.
		JOB	BEGUN	YRS.	THIS YEAR
3	Big Creek Bridge at west limits of Delhi (approaches).....	0.30	1965	Nil	0.30
4	From 4.9 mi. south of Exeter, southerly to Clandeboye 4.7 mi.....	4.70	1965	Nil	4.70
24	From 0.25 mi. south of Galt south limits northerly 0.47 mi. including realignment of Waterloo County Road 17A.....	0.47	1964	Nil	0.47
59	Detour, Woodstock, along Tecumseh Street from Hwy. 59 westerly to Brant Street.....	0.43	1965	Nil	0.43
74	From Belmont south limits to 0.2 mi. north of Belmont north limits including Kettle Creek Bridge.....	0.98	1964	Nil	0.98
81	From Hwy. 22 northerly 5.06 mi.....	5.06	1965	Nil	5.06
401	Interchange at Hwy. 76.....	0.54	1964	Nil	0.54
401	Interchange at County Road 3 to Rodney (Furnival Road, 5 mi. west of Hwy. 76).....	0.47	1964	Nil	0.47
	TOTALS.....	12.95			12.95

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
3	Big Creek Bridge at west limits of Delhi (approaches).....	0.32	1965	Nil	0.30	9,248
4	From 4.9 mi. south of Exeter southerly to Clandeboye 4.7 mi.....	4.70	1965	Nil	4.70	144,263
7	Department of Hwys. patrol yard (Elginfield) 0.8 mi. west of intersection of Hwys. 4 and 7 (off Hwy. 7).....	—	1965	—	—	6,190
24	From 0.25 mi. south of Galt south limits northerly 0.47 mi. including realignment of Waterloo County Road 17A.....	0.47	1964	Nil	0.47	11,970
59	Detour, Woodstock, along Tecumseh Street from Hwy. 59 westerly to Brant Street.....	0.43	1965	Nil	0.43	1,625
74	From Belmont south limits to 0.2 mi. north of Belmont north limits including Kettle Creek Bridge.....	0.98	1964	Nil	0.98	47,455
81	From Hwy. 22 northerly 5.06 mi.....	5.06	1965	Nil	5.06	145,589
401	Interchange at Hwy. 76.....	0.54	1964	Nil	0.54	39,489
401	Interchange at County Road 3 to Rodney (Furnival Road, 5 mi. west of Hwy. 76).....	0.47	1964	Nil	0.47	37,598
401	Department of Hwys. patrol yard (Iona) off Elgin County Road 14, 0.3 mi. south of Hwy. 401.....	—	1965	—	—	3,847
	TOTALS.....	12.97			12.95	447,274

New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	YEAR COMPLETED
2	4.0 mi. west of junction of Hwys. 2 and 4 (Lambeth).....	Patrol	Salt shed	1965	February, 1966
2	4.0 mi. west of junction of Hwys. 2 and 4 (Lambeth).....	Patrol	Heated storage	1965	February, 1966
7	0.5 mi. west of junction of Hwys. 7 and 4 (Elginfield).....	Patrol	Patrol Garage	1966	Not completed
81	2.0 mi. north of junction of Hwys. 7 and 81 (Parkhill).....	Patrol	Salt shed	1965	March, 1966

Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted—handrails.....	14	—	—
Calcium dust layer on gravel roads.....	—	20	6
Calcium for de-icing roads.....	—	Nil	—
Development roads built.....	n/a	—	—
Off-road parks maintained.....	13	—	—
Roads snowploughed and kept open, King's Highways.....	20	—	770
Roads snowploughed and kept open, secondary highways.....	—	—	—
Roadside picnic places maintained.....	89	—	—
Routine maintenance, King's Highways.....	20	—	770
Routine maintenance, secondary highways.....	—	—	—
Salt for de-icing roads.....(raw)	—	20,582	—
Salt in sand, stockpiled.....	—	2,447	—
Sand for winter maintenance.....(cubic yards)	—	25,526	(C.Y.)
Scale houses maintained.....	3	—	—
Seeding by department's forces.....(acres)	65	—	—
Seeding by contract.....(acres)	109	—	—
Shrubs received and planted this year.....	7,306	—	—
Signs erected or replaced.....	3,787	—	—
Snow fence erected, dismantled, stored.....	—	—	119
Snow hedges planted this year.....	—	—	3.5
Traffic lights installed this year.....	1	—	—
Weed control.....(gals.)	1,274	—	1,172
Zone painting on King's Highways.....(gals.)	—	11,281	841
Zone painting on secondary highways.....(gals.)	—	—	—

**DISTRICT No. 3 — STRATFORD**

**J. G. Tillcock, P.Eng., District Engineer**

**CONSTRUCTION**

The fiscal year 1965-66 saw the completion of seven carry-over contracts and thirteen new contracts. Work commenced on six contracts which will be carried over and completed during the 1966 construction season.

The work of grading, drainage, granular base and hot mix paving was completed on Highway 8 from Stratford West Limits to Seebach's Hill.

Grading, drainage and granular base was completed on Highway 97, Plattsville easterly for 6.09 miles. This section will be paved under separate contract in the 1966 construction season and is the last section of old gravel road to be reconstructed between Hickson and Galt.

Work of grading, drainage and granular base was completed 1.1 miles north of the Maitland River at Goderich for 4.74 miles on Highway 21.

Grading, drainage, granular base, hot mix paving and C.N.R. overpass was completed 1.0 mile south of Mitchell south limits to Mitchell north limits on Highway 23.

Grading, drainage, granular base, hot mix paving and structure was completed on Highway 23 at the Little Maitland River, 3.0 miles south of Palmerston.

Final work of trimming and clean up was completed on grading, drainage, granular base and four structures, Highway 86, 3.2 miles west of Elmira, westerly for 2.4 miles.



Hwy. 86 — At Conastaga River. photo 6886 — (Stratford)



Grading, drainage, granular base and hot mix paving was completed on the Beaverdale Road and Highway 24 in the town of Hespeler which resulted in much improved grade and alignment to the Beaverdale Road and providing improved turning movements on Highway 24. This contract also included widening of deceleration lanes at two interchanges, Highway 401 and Highway 24 and Highway 401 and Highway 8.

Grading, drainage, granular base and hot mix paving was completed at the intersection of Highway 21 and Highway 83 to provide improved turning movements.

Grading, drainage, granular base, hot mix paving and structure widening was completed on Highway 136 from east limits of the Village of Alton to the intersection of John Street in the town of Orangeville for 4.66 miles. This work resulted in much improved alignment and grade to a former gravel highway.

The work of grading, drainage, granular base and hot mix paving was carried out for the Greenway Diversion, 4.7 miles south of Grand Bend on Highway 81. This work eliminates a right angle turn at the intersection of old Highway 81 and two Township Roads.

Grading, drainage, granular base and hot mix paving was completed on Highway 86 from the intersection of Highway 86 and 85 westerly for 5.9 miles. This work included widening and extensive storm sewer and curb and gutter work on Church Street in the town of Elmira.

Grading, drainage, granular base and hot mix paving was completed for a D.H.O. patrol yard on Highway 9 at Harriston.

Improved intersection work was completed on Highway 21 and Huron County Road 23 at Kintail which included grading, drainage, granular base and hot mix paving.

Hot mix paving, grading, drainage and granular base was completed on Highway 4 from Clinton to Blyth for 8.31 miles excluding the village of Londesborough. This work included improvement to intersection of Huron County Road 8 and Highway 4 at the north limits of the town of Clinton.

Grading, drainage, granular base and hot mix paving was completed at the intersection of Woolwich Township Road 18 and Highway 85 south of Elmira. This work included the widening of Highway 85 to provide much improved turning movements.

Hot mix paving was completed on Highway 21 from 1.1 miles northerly for 4.75 miles and the Harbour Road in Goderich for 0.26 miles.

Waterproofing and paving of bridge decks was completed on the Lucknow River bridge, Highway 86 and the Bayfield River bridge on Highway 21.

The removal and construction of a Concrete Culvert was carried out 7.0 miles west of Listowel on Highway 86.

The work of seeding and mulching was carried out by contract on Highway 21 from 1.1 miles north of the Maitland River at Goderich northerly for 4.7 miles.

The work of seeding and mulching was carried out by contract on Highway 136 from the easterly limits of Alton to the intersection of John Street in Orangeville for 4.66 miles.

With the exception of trimming, work was completed on the Teeswater Bridge on Highway 4 at Teeswater. This work eliminates an old narrow structure and greatly improves the approaches with widening and new curb and gutter and sidewalk.



Grading, drainage, granular base and hot mix paving was started on Highway 7 in the village of Rockwood for 0.35 miles. This work included extensive road widening, storm sewers and curb and gutter. This project will be completed in the early part of the 1966 construction season.

With the exception of trimming, work was completed on a new concrete structure and approaches at the west limits of the town of Harriston on Highway 9.

Work commenced on grading, drainage, and granular base from 5.8 miles east of Elmira to Highway 7 on Highway 86, for 7.79 miles. This project will be completed during the 1966 construction season.

Work commenced on grading, drainage, granular base and hot mix paving on Highway 23 from one mile south of Monkton northerly 6.7 miles to County Road 6 at Newry. This contract will be completed during the 1966 construction season.

The work of clearing commenced on the Hanna Memorial Bridge, north branch of the Maitland River in the town of Wingham. This work includes grading, drainage, granular base, hot mix paving and structure.

#### MAINTENANCE

Routine maintenance was carried out during the past year on 685 miles of King's Highway.

The winter was not exceptionally severe, but there were many light snow-falls, which necessitated using a large quantity of salt for ice control.

Hot mix patching by contract was carried out on Highway 86 from Wingham to Amberley and on Highways 21 and 83, between Grand Bend and Bayfield and between Grand Bend and Exeter.

Department forces removed 696 dead and dangerous trees and 564 diseased elm trees were removed by contract.

One five bay metal Clad Patrol garage was erected for the Erin patrol.

1,424,896 square yards of seeding was carried out by department forces.

3,175 shrubs and trees were planted.

Chemical weed control was carried out on approximately 500 miles of highway.

Zone painting was carried out on 681 miles of highway.

1,692 signs were erected or replaced.

29 off-road parks and 121 roadside picnic places were maintained.

Erosion control by adding top soil and seeding was carried out on steep slopes on Highway 24 between Guelph and Erin. The following permits were issued by the Sign and Building Section: Building and Structures—323, Encroachment—55, New Entrances—126.

## Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE
			FLASH. LIGHTS BELL
87	C.P.R. Lot 28, concessions 8 and 9, Minto Township, County of Wellington.....		X
24	C.P.R. Town of Hespeler.....		X

## Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
				COMPL. PREV. YRS.		
8	From Stratford west limits westerly to Seebach's Hill.....	4.91	1964	—	4.91	20,636
23	From one mi. south of Mitchell town limits to Mitchell north limits including C.N.R. overhead bridge.....	2.92	1964	—	2.92	8,129
23	Little Maitland River, three mi. south of Palmerston.....	0.29	1964	—	0.29	1,190
9	Harriston patrol yard.....	—	1965	—	—	1,136
21	Junction of Hwy. 21 and Huron County Road 23 at Kintail.....	0.64	1965	—	0.64	266
8	Beaverdale Road, town of Hespeler.....	1.25	1965	—	1.25	3,755
21						
and 83	Intersection of Hwy. 21 and Hwy. 83.....	0.28	1965	—	0.28	985
81	Greenway diversion, 4.7. mi. south of Grand Bend.....	0.64	1965	—	0.64	2,015
86	From intersection of Hwys. 86 and 85, town of Elmira westerly.....	5.90	1965	—	5.90	21,287
136	From easterly limits of the village of Alton to the intersection of John Street in the town of Orangeville.....	4.66	1965	—	4.66	9,470
4	From Clinton to Blyth (excluding the village of Londesborough).....	8.31	1965	—	8.31	15,591
21	From 1.1. mi. north of Maitland River, Goderich northerly 4.75 mi. and Harbour Road, Goderich 0.26 mi.....	5.01	1965	—	5.01	15,300
85	Intersection of Woolwich Township Road 18, south of Elmira.....	0.31	1965	—	0.31	1,200
86	Construction of a concrete culvert and removal of an existing concrete culvert.....	—	1965	—	—	110
TOTALS.....		35.12			35.12	101,070

## Bituminous Prime on Gravel Roads

HWY. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
25	Junction of Hwys. 24 and 25 southerly.....	5.50	14,547	750
86	Junction of Hwys. 7 and 86, five mi. east of Elmira.....	8.00	24,600	935
TOTALS.....		13.50	39,147	1,685

### Bituminous Resurfacing of Old Pavement (Hot Mix Patching)

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
86	From 4.0 mi. west of junction Hwys. 4 and 86 to junction Hwys. 21 and 86 (Amberley).....	—	1,568
21	From 1.3 mi. south to 21.1 mi. north of junction of Hwys. 83 and 21.....	—	1,375
TOTAL.....			2,943

### Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
23	C.N.R. overhead bridge in Town of Mitchell.....	1964	1965	1965	Reinforced concrete and structural steel
4	Teeswater River Bridge at Teeswater.....	1965	1966	1965	Reinforced concrete barrel arch
87					
and 89	Dredge Creek at west limits of Town of Harrison	1965	1966	1965	Reinforced concrete
136	Credit River Bridge widening.....	1964	1965	1965	Reinforced concrete

### Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
8	From Stratford west limits westerly to Seebach's Hill.....	2.41	16,315
97	From Plattsville easterly.....	6.09	4,998
21	From 1.1 mi. north of Maitland River northerly.....	4.74	5,000
25	One mi. south of Ospringle.....	—	4,995
24	0.65 mi. south west of Erin.....	—	4,995
7, 8	D.H.O. patrol yard, 1.4 mi. east of New Hamburg.....	—	4,995
7, 86	D.H.O. patrol yard, Guelph.....	—	4,998
8	Beaverdale Road, town of Hespeler.....	1.25	1,871
86	3.2 mi. west of Elmira westerly 2.4 mi.....	2.40	4,996
86	From 4.0 mi. west of junction of Hwys. 4 and 86 to junction Hwys. 21 and 86 (Amberley).....	—	1,352
21	From 1.3 mi. south to 21.1 mi. north of junction of Hwys. 83 and 21.....	—	1,195
TOTALS.....		16.89	55,710

## Crushed Gravel and Stone on Roads by Department's Forces

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
SURFACE PATCHING (Gravel Roads)			
25	Junction Hwys. 24 and 25 to Wellington-Halton line.....	5.0	1,941
86	Junction Hwys. 7 and 86 to Cox Creek.....	8.0	2,684
86	Waterloo-Wellington line to 5.27 mi. east of Dorking.....	3.75	144
	Various locations—for surface patching.....		1,117
SHOULDER OPERATIONS			
4	Wingham-Blyth.....	12.0	2,846
6	Arthur-Mount Forest.....	15.0	1,734
7	Stratford—east of Shakespeare.....	7.0	3,187
8	Seaforth-Dublin.....	5.0	2,739
23	Whalens Corners to Russelldale.....	10.0	3,134
86	Lucknow-Wingham.....	12.0	2,105
87	3 mi. east of Bluevale to Gorrie.....	5.0	2,846
	Various locations—shoulders.....		6,860
TOTALS.....		82.75	31,337

## Grading and Culverts

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	MILES COMPL.
				PREV. YRS.	THIS YEAR
21	From 1.1. mi. north of Maitland River northerly.....	4.74	1964	—	4.74
23	From one mi. south of Mitchell town limits to Mitchell north limits including C.N.R. overhead bridge.....	2.92	1964	2.00	0.92
97	From Plattsville easterly.....	6.09	1964	—	6.09
21	Junction of Hwy. 21 and County Road 23 at Kintail.....	0.64	1965	—	0.64
8	Beaverdale Road, town of Hespeler.....	1.25	1965	—	1.25
21					
nd 83	Intersection of Hwy. 21 and Hwy. 83.....	0.28	1965	—	0.28
81	Greenway diversion 4.7 mi. south of Grand Bend.....	0.64	1965	—	0.64
86	From intersection of Hwys. 86 and 85, town of Elmira westerly.....	5.90	1965	—	5.90
36	From easterly limits of the village of Alton to the intersection of John Street in the town of Orangeville.....	4.66	1964	—	4.66
4	From Clinton to Blyth (excluding the village of Londesborough).....	8.31	1965	—	8.31
85	Intersection of Woolwich Road 18, south of Elmira.....	0.31	1965	—	0.31
86	From 5.8. mi. east of Elmira to junction Hwy. 7.....	7.79	1965	—	—
23	From one mi. south of Monkton northerly 6.7 mi. to County Road 6 (Newry).....	6.70	1966	—	—
TOTALS.....		50.23		2.00	33.74



## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	THIS FISCAL YEAR	
				COMPL. PREV. YRS.	MILES COMPL.	TONS PLACED
23	From one mi. south of Mitchell town limits to Mitchell north limits including C.N.R. overhead bridge.....	2.92	1964	1.90	1.02	26,892
97	From Plattsville easterly.....	6.09	1964	—	6.09	244,300
21	From 1.1 mi. north of Maitland River northerly.....	4.74	1964	—	4.74	213,470
9	Harrison patrol yard.....	—	1965	—	—	14,430
21	Junction of Hwy. 21 and Huron County Road 23 at Kintail.....	0.64	1965	—	0.64	4,730
8	Beaverdale Road, town of Hespeler.....	1.25	1965	—	1.25	23,343
21						
and 83	Intersection of Hwys. 21 and 83.....	0.28	1965	—	0.28	9,065
81	Greenway diversion, 4.7 mi. south of Grand Bend.....	0.64	1965	—	0.64	30,500
86	From intersection of Hwys. 86 and 85, town of Elmira westerly.....	5.90	1965	—	5.90	34,520
136	From easterly limits of the village of Alton to the intersection of John Street in town of Orangeville.....	4.66	1964	—	4.66	123,950
4	From Clinton to Blyth (excluding the village of Londesborough).....	8.31	1965	—	8.31	25,647
21	From 1.1 mi. north of Maitland River Goderich northerly 4.75 mi. and Harbour Road, Goderich 0.26 mi.....	5.01	1965	—	5.01	12,700
85	Intersection of Woolwich township road 18 south of Elmira.....	0.31	1965	—	0.31	6,840
86	Construction of a concrete culvert and removal of an existing concrete culvert.....	—	1965	Invitation bid	—	390
TOTALS.....		40.75		1.90	38.85	770,777



Hwy. 8 — ¼ mile west of Stratford. photo 6890 — (Stratford)

New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
24	Erin patrol yard—lot 13, concession 9, Township of Erin.....	Metal clad	Garage	1965	
86	Lucknow patrol yard—lot 11, concession 1, Township of Lucknow.....	Metal clad	Lunchroom Office Tool room addition	1965	March, 1966

Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	Nil	—	—
Calcium dust layer on gravel roads.....	—	115	—
Calcium for de-icing roads.....	Nil	—	—
Development roads built.....	5	—	—
Off-road parks maintained.....	29	—	—
Roads snowploughed and kept open, King's Highway.....	20	—	685
Roads snowploughed and kept open, secondary highways.....	Nil	—	Nil
Roadside picnic places maintained.....	121	—	—
Routine maintenance, King's Highway.....	20	—	685
Routine maintenance, secondary highways.....	Nil	—	—
Salt for de-icing roads.....(raw)	—	15,189.178	—
Salt in sand, stockpiled.....	—	2,187.210	—
Sand for winter maintenance.....	—	54,327	—
Scale houses maintained.....	1	—	—
Seeding by department's forces.....(acres)	(294.4)	1,424,896	—
Shrubs received and planted this year.....	3,175	—	—
Signs erected or replaced.....	1,692	—	—
Snow fence erected, dismantled, stored.....	—	—	100.00
Snow hedges planted this year.....	Nil	—	Nil
Traffic lights installed this year.....	Nil	—	—
Weed control.....	—	—	1,105.6
Zone painting on King's Highway.....(gals.)	—	—	681
Zone painting on secondary highways.....(gals.)	—	—	Nil

**DISTRICT No. 4 — HAMILTON**

**H. Greenland, P.Eng., District Engineer**

**CONSTRUCTION**

In the Hamilton area paving was completed on Highway 403 from Longwood Road to the Aberdeen interchange and was opened to traffic to this point on July 9, 1965. A contract was let for an additional 1.81 miles of grading commencing west of the proposed TH and B Subway.

Under connecting link agreement projects on King Street, Dundurn Street, and Paradise Road adjacent to the King Street interchange were completed.

On Highway 6 reconstruction from Clappison's Corners southerly to Highway 403 was completed, as was the Q.E.W. widening to six lanes from Highway 25 to the Freeman interchange. Grading was commenced on a new Niagara Falls leg connecting Highway 403 to the Q.E.W. at Freeman.

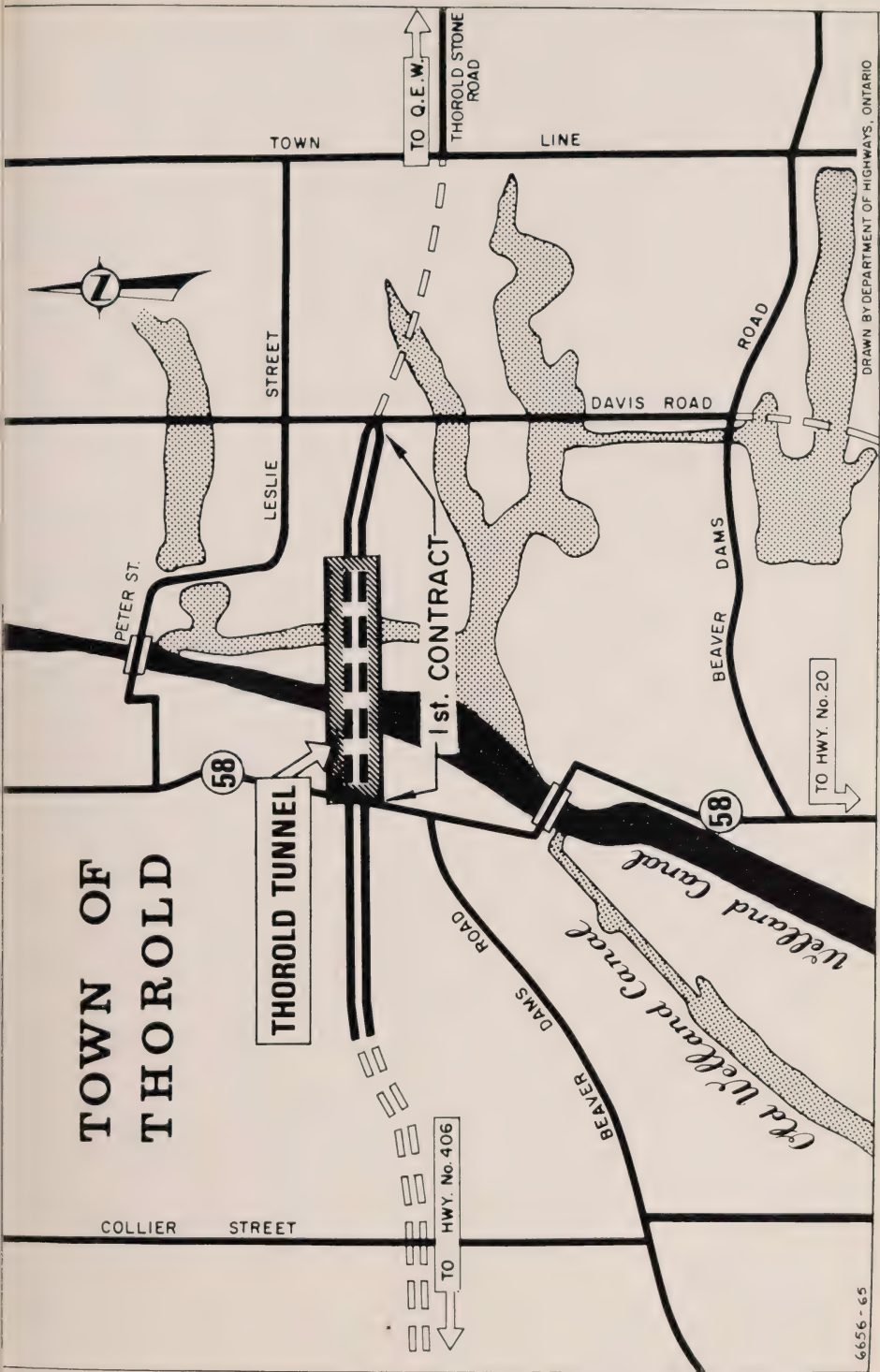
On the Burlington Bay Skyway work was commenced on the installation of four miles of median guide rail.

At Waterdown the new structure carrying Highway 5 over the C.P.R. and Grind-



Hwy. 6 — South of Clappisons Corner. photo 7686 — (Hamilton)







stone Creek was commenced. The structure carrying Plains Road (Highway 25) over the C.N.R. at Brant Street was completed.

Resurfacing of Highway 56 from Blackheath to Highway 3 was completed as was Highway 20 from Elfrida easterly to the Lincoln-Wentworth county line.

In the town of Dundas, under connecting link agreement, .86 miles of Highway 8 was reconstructed.

In the Brantford area on Highway 403, two additional miles of grading and five structures were completed. A contract for 6.32 miles of granular base and hot mix paving was commenced. On Highway 99 grading and paving continued.

Resurfacing of Highway 2 from Brantford to Paris was completed, as was a section of Highway 2 in the vicinity of Alberton.

A contract for grading of 8.41 miles was commenced on Highway 24A from Scotland northerly. Grading and hot mix paving was completed on Highway 52 from Kirkwall to Highway 97. On Highway 53, west of Brantford, a new intersection was completed at Pleasant Ridge Road.

Work commenced on the Kitchener-Waterloo Expressway with the awarding of a contract for the King Street detour at Montgomery Road.

Three contracts for the relocating of utilities and the contract for grading and four structures on King Street from Block Line Road to Doon Road were also awarded.

In the St. Catharines area at Jordan Road and the Q.E.W. an overpass and a section of service road was completed. Work was also commenced on an overpass at Victoria Street and the Q.E.W. at Vineland.

Paving was completed on 3.6 miles of Highway 406 in St. Catharines and this section was opened December 7, 1965.

Work commenced on the extension of service roads at Lake Street, St. Catharines for the control of access to the Q.E.W.

Turning lanes were constructed at five intersections on the Q.E.W. between Hamilton and Niagara Falls. In addition to this three signalized intersections between Hamilton and Beamsville on the Q.E.W. were resurfaced.

The south bound lane of the Q.E.W. between Highway 20 and Fort Erie was resurfaced.

In the Niagara Falls area reconstruction of Highway 8 southerly from St. Davids was completed.

Widening of a section of Highway 20 under connecting link agreement in the city of Niagara Falls was completed. Work continued on Highway 3 westerly from Fort Erie to the Gorham Road, and a contract was let to reconstruct Highway 3 in the town of Fort Erie under connecting link agreement.

#### THOROLD TUNNEL

Three contracts were let in connection with the realignment of Highway 58 in Thorold. The first contract, now completed, provided drainage facilities through the old Welland Canal. The contract for the construction of the tunnel under the existing canal is progressing according to schedule.



The third contract, which provided the Thorold Tunnel contractor with a disposal area for surplus materials, was completed on Highway 58 from the east portal of the tunnel to its junction point with existing Highway 58, south of Thorold.

At the Carlton Street tunnel site an eduction dewatering system was installed, when discovery of an induced artesian condition indicated that the proposed plans for construction could not be performed during the brief construction period after the current shipping season ends. This installation will permit the work to be tendered on schedule.

Sections on Highway 7 in the municipalities of Acton and Georgetown were reconstructed under connecting link agreements.

#### MAINTENANCE

A section of the central span of the Burlington Bay Skyway and four low level bridges were painted by contract during the year.

Handrail painting of other bridges and minor bridge repairs were continued by district forces.

Due to the boundary change, Hamilton District gained four patrols and lost one. This increased the district mileage by 64.

Seven new traffic signals were installed, five existing signals rebuilt, and three temporary signals installed for construction detours.

Three hot mix patching contracts laid 23,781 tons of asphalt to correct the deteriorated surface of the existing pavement. Surface treatment on 11 miles of King's highways was completed. Approximately 2.5 miles of slurry seal was laid as a test section on Highway 56. Due to the lateness of the season when the work was performed, the material curing prolonged the operation, but the final result is satisfactory.

Grading and paving was completed at the new patrol sites of Elfrida on Highway 20 east of the junctions of Highways 20 and 53, and Wainfleet on Highway 3.

New temporary patrol offices were built at Palermo, St. George and Burford. Three salt sheds were erected.

The district forestry crew seeded 67 acres, planted 2,337 shrubs, sprayed 286 miles of right-of-way and removed 977 dead and dangerous trees. A contractor removed 183 dead trees throughout the district.

Approximately 800 rods of farm fence was erected by district forces to fulfill terms of property settlements.

The district sign shop erected 2,808 permanent signs and 2,351 temporary signs for construction contracts. The permanent signs include 25 overhead extrusion type.

Due to the heavy construction period, the temporary signs increased over last year. Also, 5,642 delineators were manufactured and erected.

The two zone painting crews applied 12,900 gallons of paint by the glass bead overlay method. Due to ease of paint and bead application combined with faster reflection, the overlay method appears greatly superior to the combined application method previously used.

Winter maintenance on 867 miles of King's Highways was carried out by snow plowing, application of 8,200 tons of salt (sodium chloride) as raw chemical and 72,300 tons of sand mixed with salt.

### Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	WORK BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
3	Fort Erie westerly to County Road 28.....	2.64	1964	—	2.64	9,564
3	Wainfleet patrol yard.....	—	1965	—	—	1,324
6	Clappisons Corners southerly 1.4 mi.....	1.40	1964	1.26	0.14	8,436
8, 8A	Stamford northerly to St. David's west limits.....	3.25	1965	Nil	3.25	24,065
20	Elfrida patrol yard.....	—	1965	—	—	682
25,	Old C.N.R. Overhead westerly to					
Q.E.W.	Freeman interchange.....	0.53	1964	0.40	0.13	3,713
52	From Hwy. 97 southerly 1.65 mi.....	1.65	1964	—	1.65	3,965
53	0.5 mi. west of Brantford.....	0.36	1965	—	0.36	697
85	Montgomery Road to Ross Ave.,					
	Kitchener.....	0.23	1965	—	0.23	1,324
99	From Hwy. 24 easterly 3.36 mi.....	3.36	1964	—	3.36	7,793
403	Park Street, Brantford westerly					
	2.31 mi.....	2.31	1964	0.57	1.74	9,635
403	Longwood Road to Aberdeen inter-					
	change, Hamilton.....	1.88	1964	—	1.88	38,319
403	Hwy. 403 and Q.E.W. inter-					
	change, Burlington.....	0.54	1965	—	0.54	987
406	St. David's Road northerly to					
	Westchester, St. Catharines.....	3.25	1965	—	3.25	2,996
406	Westchester Avenue to St. Paul					
	Avenue, St. Catharines.....	0.37	1964	—	0.37	2,153
Q.E.W.	Hwy. 25 interchange westerly to					
	Freeman interchange.....	6.24	1964	4.99	1.25	34,337
Q.E.W.	Q.E.W. interchange at County					
	Road 20, Jordan.....	0.51	1965	—	0.51	4,900
Q.E.W.	County Road to Vineland, 6.1 mi.					
	west of St. Catharines.....	0.28	1965	—	0.28	1,641
Q.E.W.	Lake Street interchange to St.					
	Catharines.....	0.70	1965	—	0.70	156
TOTALS.....		29.50		7.22	22.28	156,687

### Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
2	From west limits of Brantford westerly to Jct. 2 and 5.....	2.85	4,866
20	Elfrida to Lincoln-Wentworth county line.....	3.70	8,993
56	From Hwy. 3 northerly to Blackheath Side Road.....	8.60	14,681
Q.E.W.,	Q.E.W.-Stoney Creek traffic circle to Beamsville and Hwy. 2,		
2	Alberton.....	0.75	1,018
Q.E.W.	From Lundy's Lane, Niagara Falls to Fort Erie.....	17.70	27,661
TOTALS.....		33.60	57,219



### Bituminous Surface Treatment

HWY. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BITUMULS USED	TONS CHIPS USED
8	Sheffield to Galt south limits.....	4.0	10,500	545.63
52	From Hwy. 8 to 2 mi. north of Hwy. 97.....	5.5	15,500	757.11
58	Blackhorse Corners northerly to South Thorold.....	1.5	4,000	195.18
TOTALS.....		11.00	30,000	1,497.92

### Bridges Built

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
2	Overpass at Hwy. 403 (Brantford by-pass)	1964	1965	1965	Continuous steel girder
6	C.P.R. overhead, 1.1 mi. south of junction Hwys. 5 and 6.....	1964	1965	1965	Continuous steel girder
8	Spencer Creek, Dundas.....	1965	1965	1965	Steel beam
20	H.E.P.C. Canal, Niagara Falls.....	1964	1965	1964	Continuous steel girder
20	Q.E.W. interchange, Niagara Falls.....	1964	1965	1964	Rigid frame concrete
24	Jct. Hwy. 403, Brantford.....	1964	1964	1965	Prestressed concrete girder
99	Fairchild Creek Bridge (west branch).....	1964	1965	1965	Prestressed beams
99	Fairchild Creek Bridge (east branch).....	1964	1965	1965	Prestressed beams

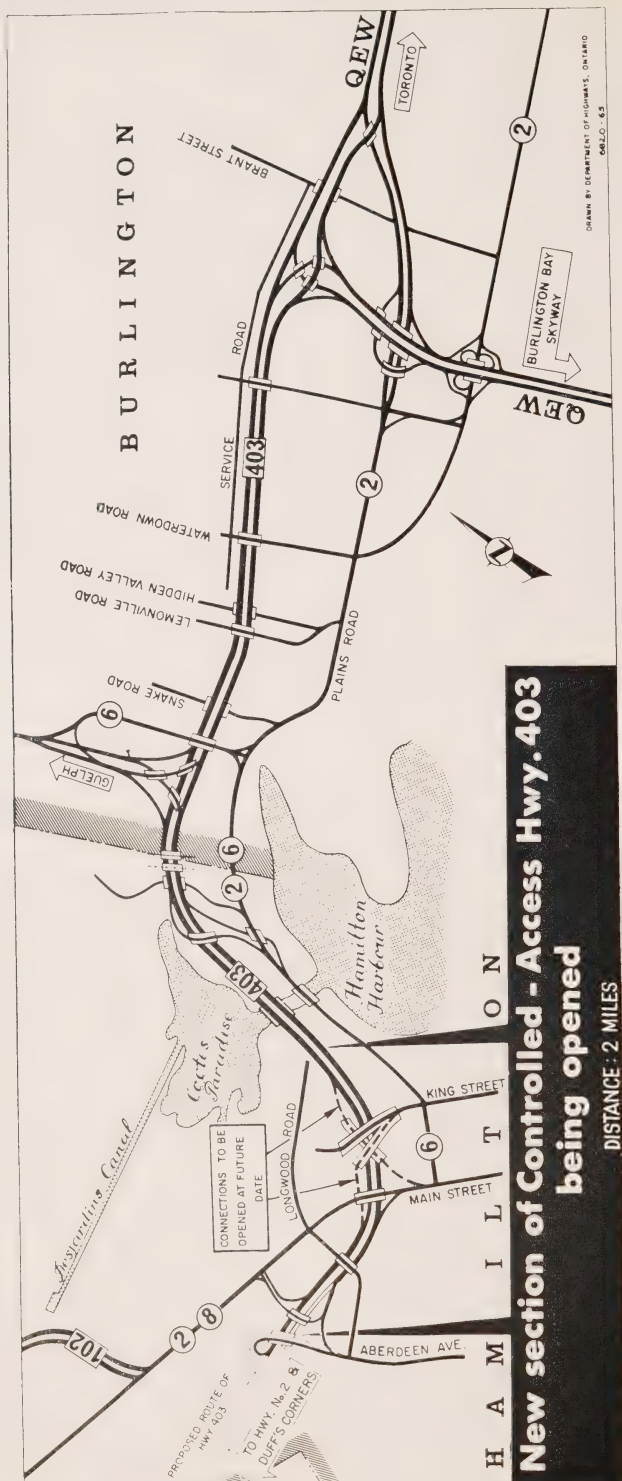


Hwy. 403 — King-Main interchange. photo 6872-B — (Hamilton)

122	C.N.R. subway 0.8 mi. east of Q.E.W.....	1965	1965	1965	Steel girder
403	Park Road underpass (Brantford by-pass)	1963	1964	1964	Continuous concrete girder
403	West Street (Brantford by-pass).....	1963	1964	1964	Continuous concrete girder
403	North Park Street (Brantford by-pass).....	1963	1964	1964	Continuous concrete girder
403	Tollgate Road underpass (Brantford by-pass).....	1964	1965	1965	Prestressed concrete girder
403	Ewing Drive underpass (Brantford by-pass)	1964	1965	1965	Prestressed concrete girder
406	Glendale Avenue overpass, St. Catharines	1963	1963	1965	Continuous girder
406	St. David's Road underpass.....	1963	1963	1965	Steel beam
406	Westchester Avenue underpass, St. Catharines.....	1963	1963	1965	Steel beam
406	Chestnut Street underpass, St. Catharines	1964	1964	1965	Concrete beam and slab
406	Geneva Street, St. Catharines.....	1964	1965	1965	Continuous steel girder
Q.E.W.	Hwy. 25 underpass, Burlington.....	1965	1965	1965	Concrete box girder
Q.E.W.	County Road 20 overpass, Louth Township.....	1965	1965	1965	Prestressed concrete beam

## Concrete Base Pavement, Asphalt Top

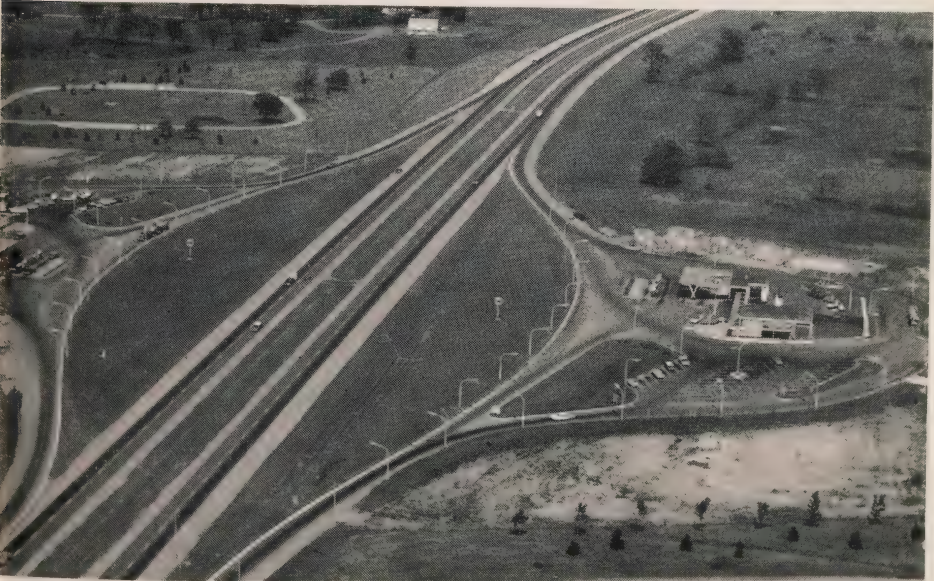
HWY. NO.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED	PAVEMENT WIDTH
406	Geneva Street, Westchester Avenue to St. Paul Street, St. Catharines.....	0.37	1964	Nil	0.37	2,153	24 feet
Q.E.W.	Various intersections Hamilton to Niagara Falls.....	0.70	1965	Nil	0.70	950	Varies
	TOTALS.....	1.07			1.07	3,103	





Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	From west limits of Brantford westerly 2.85 mi.....	2.85	11,947
3	Wainfleet patrol yard.....	—	15,230
3	Fort Erie westerly to County Road 28.....	6.70	122,324
5	Grindstone Creek, Waterdown.....	—	764
6	Clappisons Corners southerly 1.40 mi.....	0.14	4,347
8	From Doon Road to Block Line Road, Kitchener.....	0.10	2,268
8, 8A	Stamford northerly to St. David's west limits.....	2.93	163,850
20	Elfrida patrol yard.....	—	9,012
20	Junction Hwy. 53 easterly to Lincoln-Wentworth county line.....	3.70	9,056
24A	From Hwy. 53 southerly 8.41 mi.....	8.41	2,492
25 Old			
Q.E.W.	From C.N.R. overhead westerly to Freeman cut-off.....	0.13	9,211
52	From Hwy. 97 southerly 1.65 mi.....	1.32	11,409
53	0.5 mi. west of Brantford.....	0.36	2,953
56	From Hwy. 53 northerly 8.6 mi.....	8.60	18,591
58	Old Welland Canal drainage.....	0.40	25,760
85	Montgomery Road to Ross Avenue, Kitchener.....	0.23	4,714
99	From Hwy. 24 easterly 3.36 mi.....	3.36	50,023
403	North Park Street, Brantford westerly 2.31 mi.....	0.84	51,383
403	Longwood Road to Aberdeen interchange, Hamilton.....	0.47	11,599
403	From Hwy. 2 Cainsville to west limits of Brantford by-pass.....	3.78	154,995
403	Hwy. 403 and Q.E.W. interchange, Burlington.....	0.54	9,322
406	St. David's Road to Westchester Avenue, St. Catharines.....	3.25	168,769
406	Geneva Street, Westchester Avenue to St. Paul Street, St. Catharines.....	0.37	15,023
Q.E.W.	Q.E.W. and Hwy. 25 interchange westerly to Freeman interchange..	6.24	24,418
Q.E.W.	Q.E.W. interchange at Lincoln County Road 20.....	0.51	62,059
Q.E.W.	County Road to Vineland, 6.1 mi. west of St. Catharines.....	0.20	26,485
Q.E.W.	Lake Street interchange and service roads, St. Catharines.....	1.20	44,271
Q.E.W.	Lundy's Lane, Niagara Falls to Fort Erie.....	17.70	38,659
TOTALS.....		74.33	1,070,934



Hwy. 401 — Service Centre at Hespeler. photo 6761-A — (Hamilton)



### Crushed Gravel and Stone on Roads By Department's Forces

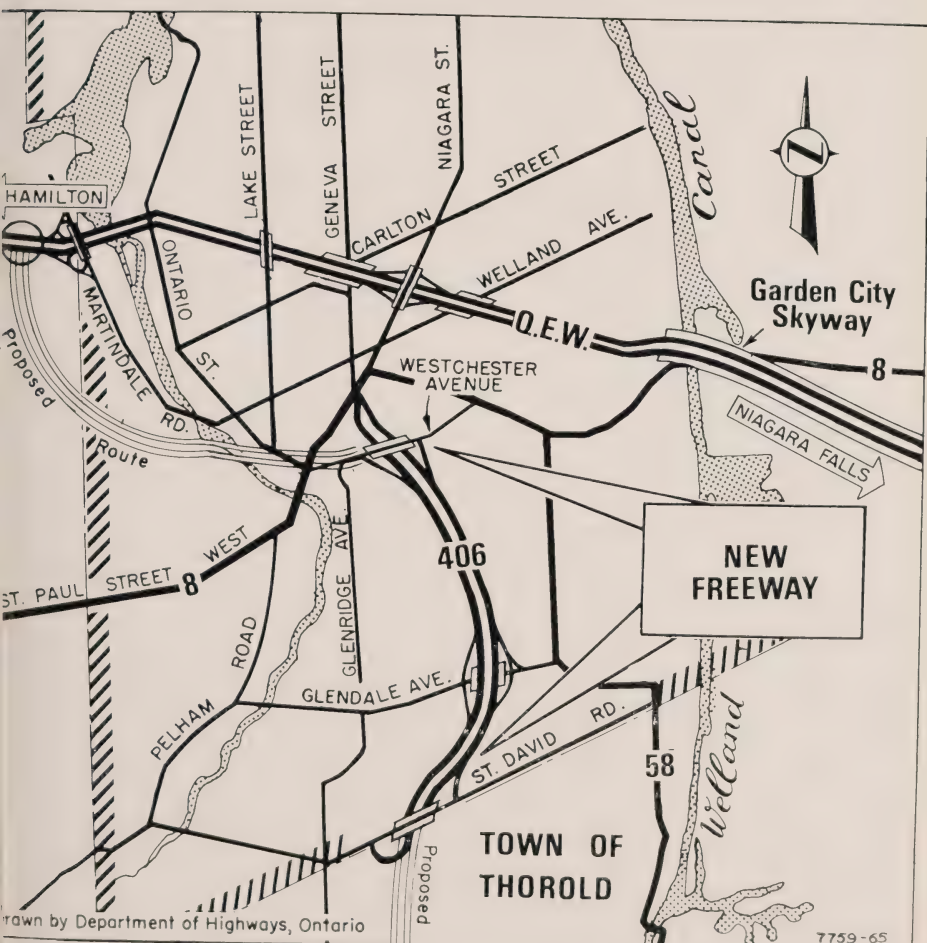
Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	Halton-Peel county line to Eastwood.....	53.00	2,347
3	Fort Erie to Jarvis.....	72.78	4,848
3A	Chambers Corners to Welland.....	9.38	700
3C	Ridgway to Fort Erie.....	6.79	200
5	Halton-Peel county line to Paris.....	31.23	5,800
6	Jarvis to junction Hwys. 6 and 401.....	38.96	900
7	Halton-Peel county line to 2.82 mi. west of Acton.....	11.26	100
8	Galt to Niagara Falls.....	57.80	2,187
20	Blackhorse Corners to junction Hwy. 8, Hamilton.....	40.34	1,996
24	Norfolk-Brant county line to Galt.....	20.86	1,396
24A	Paris to Galt.....	9.65	91
25	Junction Q.E.W. to Acton.....	24.00	46
52	Junction Hwy. 2 to Wellington-Wentworth county line.....	13.93	200
53	Junction Hwy. 56 to Hamilton east; limits.....	2.43	272
54	Junction Hwy. 3 to junction Hwy. 2, Cainsville.....	26.90	1,555
56	Elfrida to junction Hwy. 3.....	14.74	714
57	Bismark to junction Hwy. 3A.....	8.92	30
58	Junction Hwy. 3 to Thorold.....	14.91	673
97	Galt to Freelon.....	13.67	325
99	Dundas to junction Hwy. 24.....	15.80	393
401	Junction Hwy. 25 to junction Hwy. 8.....	28.49	300
405	Junction Q.E.W. to Queenston.....	5.53	357
Q.E.W.	From 5th Line, Toronto Township to Fort Erie.....	79.70	5,475
TOTALS.....		601.07	30,905

### Grading and Culverts

Hwy. No.	LOCATION	MILES		YEAR BEGUN	MILES	
		IN JOB			COMPL. PREV. YRS.	COMPL. THIS YEAR
3	Fort Erie westerly to County Road 28 (Gorham Road).....	6.70	1964		0.20	2.58
6	Clappisons Corners southerly 1.40 mi.....	1.51	1964		1.28	0.23
8, 8A	From Stamford northerly to St. David's west limits.....	3.25	1964		0.25	3.00
24A	From Hwy. 53 southerly 8.41 mi.....	8.41	1965		—	3.52
52	From Hwy. 97 southerly 1.65 mi.....	1.65	1964		0.33	1.32
53	0.5 mi. west of Brantford.....	0.36	1965		—	0.25
85	King Street from Montgomery Road to Ross Avenue (Kitchener).....	0.23	1965		—	0.23
99	From Hwy. 24 easterly 3.36 mi.....	3.36	1964		0.40	2.96
403	North Park Street westerly 2.31 mi. Brant- ford by-pass.....	2.31	1964		1.47	0.84
403	Longwood Road to Aberdeen interchange, Hamilton.....	1.88	1964		1.59	0.29
403	From TH and B Railway Hamilton to Mohawk Road interchange.....	1.81	1965		—	0.60
406	Geneva Street, Westchester Avenue northerly to St. Paul Avenue, St. Catharines.....	0.37	1964		0.04	0.33
Q.E.W.	From Hwy. 25 interchange to Freeman interchange, Burlington.....	6.24	1964		4.99	1.25
Q.E.W.	Q.E.W. interchange at County Road 20.....	0.51	1965		—	0.51
Q.E.W.	County Road to Vineland including service roads.....	0.66	1965		—	0.20
Q.E.W.	Lake St. interchange and service roads, St. Catharines.....	1.20	1965		—	1.20
Q.E.W.	Hwy. 403—Q.E.W. interchange (revision to Hamilton-Niagara Falls ramp).....	0.54	1965		—	0.54
Q.E.W.	From Hwy. 20 Niagara Falls southerly to Fort Erie.....	17.70	1965		—	17.70
TOTALS.....		58.69			10.55	37.55

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
2	From Brantford west limits westerly 2.85 mi.....	2.85	1965	—	2.85	4,995
3	Fort Erie westerly to County Road 28.....	6.70	1964	0.20	2.58	45,193
5	Grindstone Creek, Waterdown.....	—	1965	—	—	2,541
6	Clappisons Corners southerly 1.40 mi.....	1.40	1964	1.26	0.14	4,908
20	Elfrida patrol yard.....	—	1965	—	—	3,470
24A	From Hwy. 53 southerly 8.41 mi.....	8.41	1965	—	4.63	338,331
25	From C.N.R. overhead westerly to Free- man interchange.....	0.53	1964	0.40	0.13	2,891
Old E.W.						



**FIRST STAGE OF HIGHWAY NO 406**  
**CITY OF ST. CATHARINES**  
**DISTANCE: 4 miles**

52	From Hwy. 97 southerly 1.65 mi.....	1.65	1964	0.33	1.32	27,615
53	0.5 mi. west of Brantford.....	0.36	1965	—	0.36	5,575
85	Montgomery Road to Ross Avenue, Kitchener.....	0.23	1965	—	0.23	20,257
99	From Highway 24 easterly 3.36 mi.....	3.36	1965	0.40	2.96	124,357
403	Cainsville to west limits of Brantford, Brantford by-pass.....	6.32	1965	—	3.78	201,841
403	Park Street, Brantford westerly 2.31 mi.....	2.31	1964	0.57	1.74	3,031
403	Hwy. 403 and Q.E.W. interchange, Bur- lington.....	0.54	1965	—	0.54	7,884
403	Longwood Road to Aberdeen Avenue, Hamilton.....	1.88	1964	1.41	0.47	50,499
406	Geneva Street, Westchester Avenue to St. Paul Street, St. Catharines.....	0.37	1964	0.04	0.33	6,121
Q.E.W.	From Hwy. 25 interchange westerly to Freeman interchange.....	6.24	1964	4.99	1.25	7,236
Q.E.W.	Q.E.W. interchange at Lincoln County Road 20.....	0.51	1965	—	0.51	2,259
Q.E.W.	County Road to Vineland including service roads.....	0.66	1965	—	0.20	1,352
TOTALS.....		44.32		9.60	24.02	860,356

### New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
3	New Wainfleet patrol yard.....	Frame	Salt Shed	1965	1965
3	New Wainfleet patrol yard.....	Frame	Salt Shed	1965	1965
20	New Elfrida patrol yard.....	Frame	Salt Shed	1964	1965
24	St. George patrol yard.....	Frame	Temporary Patrol Office	1965	1965
53	Burford patrol yard.....	Frame	Temporary Patrol Office	1965	1965

### Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	5	—	—
Calcium dust layer on gravel roads.....	—	—	—
Calcium for de-icing roads.....	—	—	—
Development roads built.....	—	—	—
Off-road parks maintained.....	3	—	—
Roads snowploughed and kept open, King's highways.....	26	—	867
Roads snowploughed and kept open, secondary highways.....	—	—	—
Roadside picnic places maintained.....	79	—	—
Routine maintenance, King's highways.....	26	—	867
Routine maintenance, secondary highways.....	—	—	—
Salt for de-icing roads (raw).....	—	8,204	—
Salt in sand, stockpiled.....	—	10,157	—
Sand for winter maintenance.....	—	72,301	—
Scale houses maintained.....	5	—	—
Seeding by department's forces..... (acres)	66.8	—	—
Shrubs received and planted this year.....	2,337	—	—
Signs erected or replaced.....	5,159	—	—
Snow fence erected, dismantled, stored.....	—	—	56.45
Snow hedges planted this year.....	—	—	—
Traffic lights installed this year.....	7	—	—
Weed control.....	—	—	286
Zone painting on King's highways..... (gals.)	12,908	—	—
Zone painting on secondary highways..... (gals.)	—	—	—

**DISTRICT No. 5 — OWEN SOUND**

H. F. Gilbert, P. Eng., District Engineer

**CONSTRUCTION**

During the year 1965-66, we had an increase in construction work. This was particularly true in the Barrie-Orillia area.

However, the season was marked with an abnormal amount of wet weather, particularly in the late fall. This prevented us from completing a number of our projects. However, one notable exception, we were able to complete a good deal of excellent hot mix paving.

To summarize our construction, we would mention the reconstruction of Highway 6 Hepworth to Wiarton. This included the grading with the paving to be done during 1966.

We completed a bridge on Highway 4 at Durham. This work consisted of the supply and erection of zinc-coated structural steel. This was a first in the Province of Ontario. Considering the ease of construction, etc., and its expected resistance to corrosion, this should prove to be a great step forward, considering the great deal of maintenance on structural steel.

We commenced the grading and culverts on Highway 91 Stayner to Duntroon. However, here again, the work was held up by wet weather.

Highway 90 from five miles west of Barrie to Angus was undertaken in 1965. This work included grading, granular base and paving. Also included in this was a large amount of storm sewer from Angus easterly. The design section, considering the large



Hwy. 10 — Shelburne north. photo 6876 — (Owen Sound)



area to be drained, designed the sewer to its minimum requirements. This, of course, resulted in a great deal of care having to be taken during the time of construction. Also, on this contract, we laid some of the first pre-cast curb and gutter. This material was supplied by the pre-cast supplier and constructed on experimental basis. We are awaiting the results with interest.

Another one of our projects was the bridge at the Wye River, Highway 27. This structure was long overdue. The main problems were the close proximity of buildings and the wet weather.

We also commenced the work on the interchange to Orillia, old Highway 11. This work was started in the late fall. It was the first interchange to be constructed in the Owen Sound district by the use of the coordinate system for lay-out.

A contract was let on the section on Highway 12 at Coldwater for the construction of the C.P.R. overhead. However, the contract award had to be cancelled several times due to unforeseen holdups and this work only started late 1965.

Owen Sound district was also involved in other work not particularly resulting in reconstruction, or construction, of highways. First, was the construction of the service centre at Barrie. This is being built in a good location just south of Barrie which should offer the motorist a good view during his rest period.

The second such project was an access road to the Ste. Marie Indian village being constructed by the Department of Tourism at Midland. This access road was started in late 1965 and was rushed during the winter months, particularly in regards to storm sewers, etc., in order to have it completed for the tourist season in 1966.

During the past years, we have been concerned about the quality of our hot mix paving. A great deal of effort was placed on the entire operation this year in order to improve not only the quality of the mix, but the driving surface. The hot mix paving contracts included:—

- (a) Shelburne northerly, Highway 10
- (b) Southampton easterly, Highway 21
- (c) Resurfacing of Highway 26 Owen Sound to Woodford  
as well as the other jobs mentioned above.

A great deal of emphasis was placed on the surface course to attempt to get a tight surface without destroying some of the driving characteristics. One of the changes instituted was an attempt to get the contractor to carry out his surface course in one operation without stopping to pave at the entrances to township roads. This, of course, was done after the road surface was completed. This eliminated a number of rough joints caused by stopping for this work at intersecting roads.

Another problem we concentrated on, was the control of traffic and the method of paving. Where it was impossible to pass traffic conveniently, we held the contractor to one paver to prevent the traffic moving between the two pavers resulting in damage to the centre joint. This was done chiefly on an experimental basis to see what changes could be implemented. We were very pleased with the result. We hope in 1966 to place special provisions in the contracts to ensure that the contractor is aware that he will have to place a great deal more emphasis on traffic control when placing a surface course.

We could have considered 1965-66 a very satisfactory year if the weather had not been so difficult in the early and late fall.

The end result is, as stated above, we have a number of contracts to complete in 1966 which should have been completed in 1965.

## MAINTENANCE

On April 1st, 1965, district 5, Owen Sound, was enlarged to approximately 700 miles by a boundary change. Under the present arrangement district 5 now covers the counties of Grey, Bruce and Simcoe. At the same time, the nineteen patrols were reorganized. Each patrol now has an average of 35 to 40 miles of highway to patrol. Three additional patrols were established to achieve uniformity in patrol distances and services. Due to the boundary change, this district received its first controlled access highway and four lane highway from Cookstown Interchange to Severn Bridge. The entire district continues to be in a snow belt area. It is interesting to note that over forty million dollars worth of new industrial development in large plants is underway in the Georgian Bay area. This will increase commuter traffic throughout. In addition, larger tourist traffic flow is noticeable with the building of the Ste. Marie Village east of Midland. This tourist flow will continue to increase. Snowfall was close to normal this past winter but due to temperature fluctuations, buildup of snowbanks was minimal. These temperatures resulted in an abnormally high salt usage. The five and six ton single axle drive truck, equipped with one way and vee plows with wing, continues to be the most satisfactory for this area. In the heavier snow belt areas the 8-10 ton plow truck and blower continues to be very necessary. Also wing equipped graders were stationed at four locations. Travellettes, for special projects, and two ton patrol trucks are proving their worth. All patrols and supervisory staff utilized two-way radios. Day labour sanding was used in the westerly section of the district while contract sanding took place in the Simcoe County area. New sandpile locations were built at Woodford and Kincardine. The Midhurst yard was relocated four miles to the north on Highway 27.

A new patrol yard was built at Allenford. Six hundred and fifty elm trees were removed this winter by day labour methods. This removal was carried out on all elm trees condemned for this removal, due to the dutch elm disease. Twenty-three projects were carried out during the past year. Basically, the solution of drainage problems commanded our attention. We have found hot laid asphalt ditch is very effective for smaller drainage problems. Gabions were best for bank stabilization and river control while storm sewers were used on long, steep hills where shoulder washouts were a problem. Generally speaking, the enlarged district has increased the tempo of maintenance work.

## Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	GRADE SEP.		TYPE OF SIGNAL
			SUBWAY BUILT	O'PASS BUILT	
26	C.N.R.	Mileage 43.00 Meaford subdivision, lot 30, con. 8, township of Collingwood, County of Grey.....	N/A	N/A	2 Flashing Light Signals and one bell at crossing.

### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES IN JOB	WORK BEGUN	MILEAGE PREV. YRS.	THIS FISCAL YEAR	
					MILEAGE COMPL.	TONS PLACED
4	Roseborough Bridge 0.2 mi. west of Durham.....	N/A	1964	N/A	N/A	2,045.02
10	North limits of Shelburne northerly.....	3.28	1965	N/A	3.28	10,521.02
10	Dundalk to Chatsworth.....	N/A	1965	N/A	N/A	771.26
11	Intersection of Dundial Road and Hwy. 11.....	N/A	1965	N/A	N/A	110.00
11	Bradford (Holland River Bridge and approaches).....	N/A	1965	N/A	N/A	411.93
21	Southampton easterly.....	5.7	1965	N/A	5.7	9,309.12
26	Meaford west limits westerly.....	N/A	1965	N/A	N/A	571.26
27	Wye River Bridge in Wyebridge.....	0.17	1965	N/A	0.17	460.00
27	Midhurst patrol yard.....	N/A	1965	N/A	N/A	1,022.32
90	Angus easterly.....	6.03	1965	N/A	6.03	4,439.00
TOTALS.....		15.18			15.18	29,660.91

### Bituminous Prime on Gravel Roads

HWY. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS SAND USED
6	1 mi. north of Wiarton to 14 mi. north.....	13	40,081	665.50
91	Duntroon to Stayner.....	5	15,752	322.00
TOTALS.....		18	55,833	987.50



Hwy. 12 — Atherley Narrows Bridge, Orillia. photo 6782-E — (Owen Sound)



## Bituminous Surface Treatment

HWY. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS CHIPS USED
6	From 10 mi. south of Tobermory to 19.1 mi. south and from Ferndale southerly 5 mi.....	14.1	44,700	1,229.80

## Bridges Built

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
4	Roseborough Bridge 0.2 mi. west of Durham over Saugeen River.....	1964	1965	1965	Reinforced concrete and structural steel
27	Wye River Bridge in Wyebridge.....	1965	1965	1965	Reinforced concrete and prestressed box beams
91	Lamont Creek Bridge, 1 mi. west of Stayner.....	1965	—	—	Reinforced concrete
91	Batteaux Creek Bridge, 3.5 mi. west of Stayner.....	1965	1965	1965	Reinforced concrete

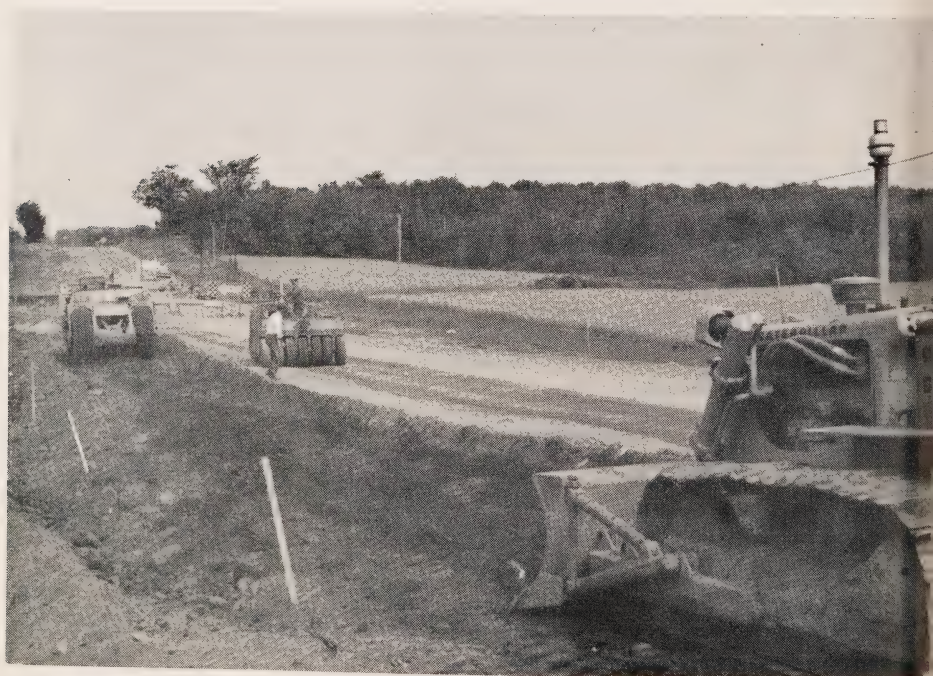
## Crushed Gravel and Stone on Roads by Contract

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
4	Saugeen River Bridge 0.2 mi. west of Durham.....	0.70	7,286.00
6	4 mi. and 6 mi. north of Wiarton.....	—	5,969.58
6	Hepworth northerly to 0.3 mi. south of Wiarton.....	6.5	83,593.00
6	From 10 mi. to 19.1 mi. south of Tobermory and from Ferndale southerly for 0.5 mi. Various locations.....	14.1	851.86
12	Ste. Marie among the Hurons—2 mi. east of Midland (parking area).....	—	7,750.00
21	Southampton easterly.....	5.7	11,343.64
10	Shelburne northerly.....	3.28	8,332.35
26	From 1 mi. east of Woodford westerly to Owen Sound.....	10.0	17,346.31
27	Midhurst patrol yard.....	—	3,489.09
27	D.H.O. yard—1 mi. north of Waverley.....	—	3,996.82
27	D.H.O. yard—Cookstown.....	—	3,981.89
27	From 2.3 mi. north of Schomberg to Thornton.....	15.7	8,998.91
27	Wye River Bridge in Wyebridge.....	—	1,366.00
90	Angus easterly.....	6.03	89,643.00
91	Stayner to Duntroon.....	4.81	310.00
91	D.H.O. yard 0.5 mi. west of Stayner.....	—	6,973.11
93	D.H.O. yard 0.5 mi. north of junction. Hwy. 93 and 400.....	—	3,996.80
00	Service centre—400-4, 0.2 mi. south of Barrie.....	—	16,499.00
TOTALS.....		66.82	281,727.36



## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
4	2 mi. south of Teeswater to junction 4 and 9 and Walkerton to Flesher- ton.....	42.1	397.0
6	Mount Forest to Tobermory.....	107.4	3,300.0
9	Clifford to Kincardine.....	41.8	50.7
10	Dundalk to Owen Sound.....	32.7	904.5
11	Bradford to Barrie and Crown Hill to Severn Bridge.....	88.2	472.5
11B	Junction Hwy. 11 (south) to junction 11 north (Orillia).....	5.6	1,548.5
12	Orillia to Coldwater and Waubauskene to Midland.....	35.5	1,540.5
12B	Atherley to north junction Hwys. 11 and 12.....	5.1	—
21	Amberley to junction Hwys. 6 and 21.....	52.9	715.5
24	5.8 mi. south of Singhampton to Collingwood.....	18.3	75.0
26	Barrie to Owen Sound.....	74.7	1,330.5
27	Cookstown to Penetanguishene.....	55.8	1,222.5
69	Junction Hwy. 11 (Washago) to south side Severn River Bridge.....	.5	7.6
70	Junction Hwys. 6 and 21 to Hepworth.....	9.2	269.2
88	Bond Head to Bradford.....	5.8	1,081.5
89	Junction Hwy. 400 to Rosemount.....	17.6	153.7
90	Barrie to Angus.....	13.0	—
91	Stayner to Duntroon.....	5.1	1,198.1
92	Elmvale to Wasaga Beach.....	8.9	51.0
93	Crownhill to Waverley.....	17.5	127.5
103	Coldwater to junction Hwy. 501.....	5.4	874.0
120	Junction Hwy. 400 to junction Hwy. 11 and 93.....	1.4	—
400	Junction Hwy. 88 to Coldwater.....	56.9	1,128.1
501	Port Severn to Honey Harbour.....	9.2	83.1
TOTALS.....		710.6	16,532.0



Hwy. 6 — North of Hepworth. photo 7252 — (Owen Sound)

## Grading and Culverts

HWY. NO.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	MILES COMPL. THIS YEAR
4	Saugeen River Bridge—0.2 mi. west of Durham.....	0.70	1965	—	0.70
6	Hepworth northerly to 0.3 mi. south of Wiarton.....	6.5	1965	—	6.5
12	Intersection of Hwys. 11 and 12.....	—	1965	—	—
7	Wye River Bridge in Wyebridge.....	—	1965	—	—
7	Midhurst patrol yard.....	—	1965	—	—
0	Angus easterly.....	6.03	1965	—	6.03
1	Stayner to Duntroon.....	4.81	1965	—	—
0	Service centre 400-4, 0.2 mi. south of Barrie.....	—	1965	—	—
TOTALS.....		18.04			12.53

## Granular Base on New Grading

HWY. NO.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
4	Saugeen River Bridge—0.2 mi. west of Durham.....	0.70	1965	—	0.70	13,283
6	Hepworth northerly to 0.3 mi. south of Wiarton.....	6.5	1965	—	6.5	265,700
7	Wye River Bridge in Wyebridge.....	.17	1965	—	.17	8,216
7	Midhurst patrol yard.....	—	1965	—	—	3,489
0	Angus easterly.....	6.03	1965	—	6.03	—
0	Service centre 400-4, 0.2 mi. south of Barrie.....	0.70	1965	—	—	35,969
TOTALS.....		14.10			13.40	326,657

## New Buildings

HWY. NO.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
1	Approximately 5 mi. east of Southampton.....	Temporary patrol office and tool shed		1965	1965
1	Approximately 5 mi. east of Southampton.....	Salt shed		1965	1965
1	Approximately 5 mi. east of Southampton.....	Heated salt shed	Temporary vehicle storage	1965	1965
27	4 mi. north of junction 26 and 27.....	Heated salt shed	Temporary vehicle storage	1964	1965
27	4 mi. north of junction 26 and 27.....	Salt shed		1965	

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS 658 gals.	TOTAL MILES
Bridges painted.....	3	80	18
Calcium dust layer on gravel roads.....	—	—	—
Development roads built.....	—	—	—
Off-road parks maintained.....	16	—	—
Roads snowploughed and kept open, King's highways.....	—	—	708
Roads snowploughed and kept open, secondary highways.....	—	—	9
Roadside picnic places maintained.....	51	—	—
Routine maintenance, King's highways.....	—	—	708
Routine maintenance, secondary highways.....	—	—	9
Salt for de-icing roads (raw).....	—	17,827	—
Salt in sand, stockpiled.....	—	4,246	—
Sand for winter maintenance.....	—	128,750	—
Scale houses maintained.....	—	—	—
Seeding by departments' forces.....(acres) S.Y.	130,680	Acres 27	—
Shrubs received and planted this year.....	1,285	—	—
Signs erected or replaced.....	7,988	—	—
Snow fence erected, dismantled, stored.....	—	—	195
Snow hedges planted this year.....	—	—	—
Traffic lights installed this year.....	—	—	—
Weed control.....	—	1,181 gals.	667
Zone painting on King's highways.....(gals.)	—	14,083.4 gals.	952.7
Zone painting on secondary highways.....(gals.)	—	117.6 gals.	8.4



# DISTRICT No. 6 — TORONTO

J. Thatcher, P.Eng., District Engineer

## CONSTRUCTION

The year 1965-66 saw the opening of a 5.5 mile section of the collector-distributor freeway in the Toronto by-pass section of the Macdonald-Cartier Freeway. Although the previous section of the freeway was completed in 1964, this year saw the first time the highway was functioning to its full width design.

Work was continued on the Highway 401 by-pass with contracts being awarded for sections between Yonge Street and Don Valley Parkway and between Highway 400 and Islington Avenue. These sections of reconstruction are well underway with expected completion in 1967. Work on the two high level structures over Hogg's Hollow continued with all the structural steel being erected and portions of the deck placed.

Construction of a section of Highway 400 from Highway 401 to Jane Street was started with completion being expected in the Fall of 1966.

Two contracts for the widening of the Q.E.W. Highway from the Credit River to the 9th line of Oakville were awarded which, when completed, will provide approximately 15 miles of six lane divided freeway.

A four lane widening on Highway 10 from Brampton northerly to Victoria was completed with the exception of a small amount of top course asphalt. The two mile experimental section of this contract was completed and is providing valuable information regarding different types and depths of base courses as well as different pavement designs.



Hwy. 10 — North of Brampton. photo 6802 — (Toronto)



The year 1965 saw the commencement of work on two high level bridges over the Rouge River on Highway 2 which will replace the existing two lane bridge. Work has also started on the grading and roadway paving for the new service centre on Highway 400 north of the Maple sideroad.

The district construction expenditure, being in excess of \$30,000,000, was the highest expenditure ever recorded and is indicative of the volume of work completed during the fiscal year 1965-66.



The Giraffe. photo 7692 — (Toronto District)

## MAINTENANCE

17,625 miles of highway were maintained during the year.

Pavement patching by contract was continued with 17,625 tons of hot mix asphalt being used on some 300 miles of highway.

Weed control spraying was carried out on 644 miles of right of way and tree planting was continued with a total of some 1200 young trees being planted. Grass mowing by contract rental was introduced and proved to be quite successful.

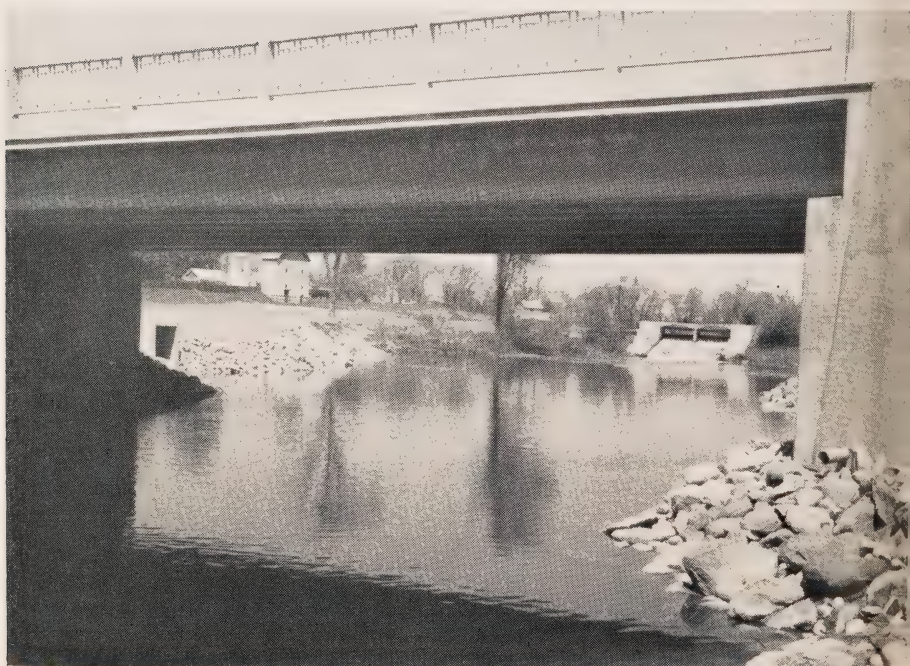
This was a busy year in the sign shop and for the sign erection crews. Over 10,000 signs were erected including a number of the new overhead freeway type on the Macdonald-Cartier Freeway. During the year, the sign-shop operations were put on a new work-order basis with finished signs being priced at an actual manufactured cost. This system is still being refined but shows good promise of greater efficiency and improved control.

17,257 tons of sand and 39,200 tons of salt were spread on 800 miles of highway as part of the winter maintenance program. These quantities represent a decrease in sand quantities and an increase in salt largely due to the increasing use of curb and gutter at pavement edges in urban areas.

### Bituminous Hot Mix Pavement

LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
Hwy. 400 interchange from Jane Street west of Wendell Avenue	1.00	1963	.25	.75	19,216
From west limits to Avenue Road to Canadian National Railway overhead bridge.....	2.57	1964	1.03	1.54	20,307
Palgrave south 3.0 mi.....	3.06	1964	—	3.06	12,361
Etobicoke Creek 4.9 mi. north Hwy. 401.....	—	1964	14%	86%	3,128
Canadian National Railway-Canadian Pacific Railway overhead bridge 3 mi. east Hwy. 50.....	.75	1964	.10	.65	2,822
Canadian National Railway-Canadian Pacific Railway overhead bridge 3 mi. east Hwy. 50.....	.48	1964	.48	—	383
Bathurst Street to Hwy. 400.....	3.80	1964	3.19	.61	7,924
Canadian National Railway over-bridge east of Keele Street to Jane Street.....	1.90	1964	.75	1.15	22,996
From Hwy. 5 (Cooksville) north to Burnhamthorpe.....	1.63	1965	—	1.63	15,193
1.6 mi. west of Hwy. 10 (Mississauga Road) westerly 2.2 mi.....	2.30	1965	—	0.30	6,662
Macdonald-Cartier Freeway (Hwy. 401) and Weston Road interchange—From Wendell Avenue to 0.30 mi. west of Humber River, 0.89 mi. (Macdonald-Cartier Freeway), 0.57 mi. (Weston Road).....	1.46	1965	—	0.50	5,620

401	Macdonald-Cartier Freeway (Hwy. 401) from existing Leslie Street easterly to immediately west of Victoria Park Avenue, including Don Valley Parkway interchange	1.73	1965	—	0.25	3,832
401	0.3 mi. east of McCowan Road.....	—	1965	—	100%	2,276
401	Macdonald-Cartier Freeway (Hwy. 401) from west of Hogg's Hollow to east limit of Bayview Avenue interchange.....	1.85	1965	—	0.30	5,280
Jane Street	Black Creek bridge widening, grading, drainage, structures and highway lighting.....	—	1965	—	—	53
400	400 patrol yard.....	—	1965	—	100%	5,307
Q.E.W.	3.8 mi. west of Hwy. 10 westerly 3.3 mi.....	3.30	1965	—	—	105
401	Macdonald-Cartier Freeway (Hwy. 401) from east end of Bayview interchange to immediately east of Don River including the Leslie Street interchange.....	1.97	1965	—	.36	2,946
401	Macdonald-Cartier Freeway (Hwy. 401) and Islington Avenue interchange from 0.30 mi. west of Humber River to Kipling Avenue—1.98 mi.....	1.98	1965	—	.20	2,848
	Department of Highways—Downsview.....	—	1965	—	—	—
	TOTALS.....	29.78		5.80	11.30	139,259



Hwy. 48 — Black Creek Bridge. 3 miles south of Sutton. photo 6805-A — (Toronto)



### Bituminous Mulch and Cold Mix

LOCATION	THIS FISCAL YEAR	
	MILES	TONS
	COMPL.	PLACED
Various isolated patching throughout district—cold mix.....		1,183.47
Various isolated patching throughout district—hot mix patching.....		1,290.68

### Bituminous Resurfacing of Old Pavement

#### Hot Mix Patching—Class 1

LOCATION	THIS FISCAL YEAR	
	MILES	TONS
	COMPL.	PLACED
Sunderland to Manilla.....	4.3	1,200
Holland Landing.....	3.0	180
Sunderland to Atherly.....	33.9	1,300
Jct. Hwy. 48 to Jct. Hwy. 12.....	21.8	1,665
Jct. Hwy. 47 to Port Bolster.....	26.6	1,440
Jct. Hwy. 12 to Washago.....	15.9	300
Holland Marsh.....	2.0	140
Port Credit to Clarkson.....	3.8	350
Erindale to Oakville east limit.....	2.3	500
Woodhill to Jct. Hwy. 48.....	13.6	1,165
Cooksville to Orangeville.....	28.5	900
Schomberg to Orangeville.....	21.3	1,200
Q.E.W. to Jct. Hwy. 9.....	27.9	2,850
Steeles Avenue to Jct. Hwy. 9.....	22.2	600
Vicinity of Dixon Road.....	2.0	300
Dixie Road to 6th Line, Oakville.....	10.0	260
Metro east limit to Oshawa.....	14.3	800
Markham to Brooklin.....	17.4	1,400
Manchester to Ontario-Durham Line.....	10.0	200
Whitby to Manchester.....	15.2	675
Steeles Avenue to Jct. Hwy. 47.....	12.9	200
TOTALS.....	308.9	17,625

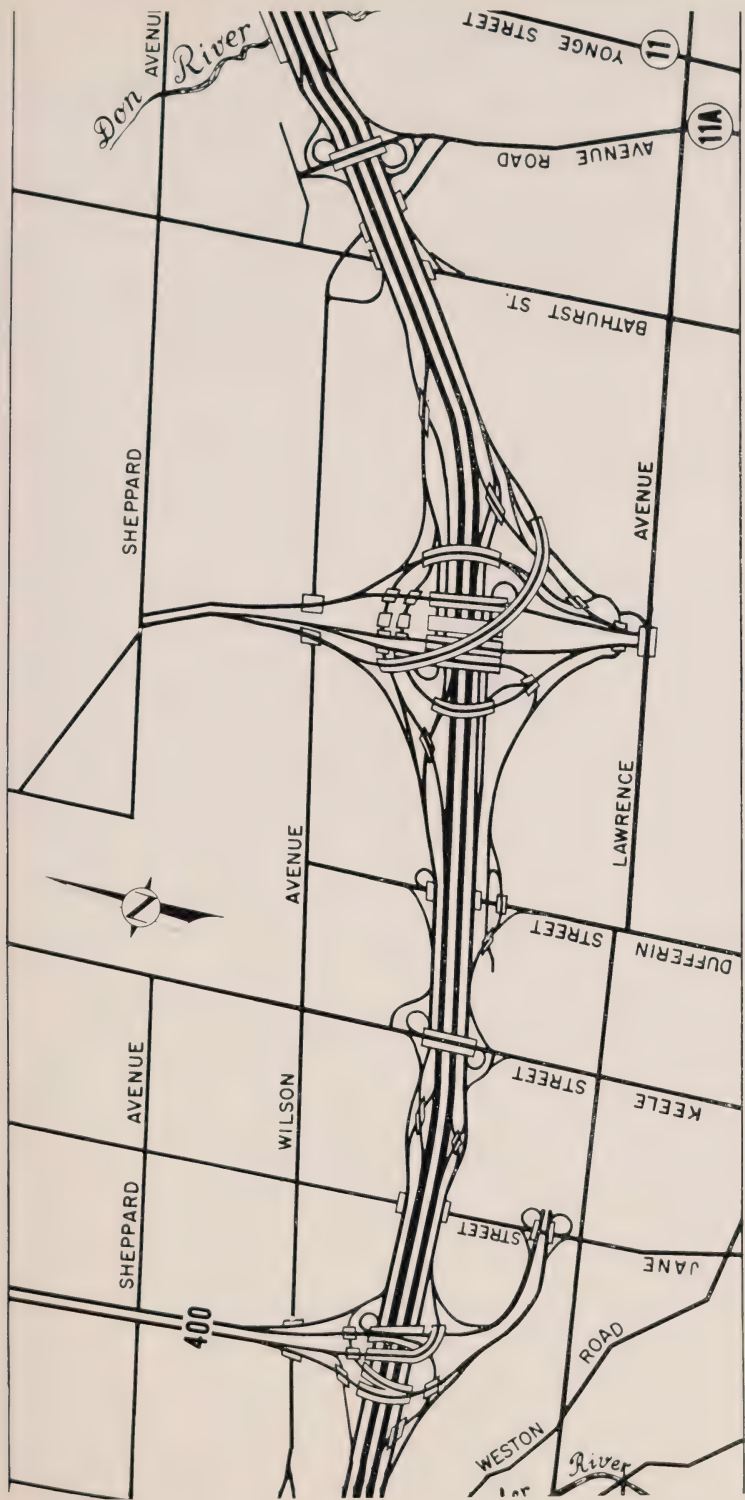
### Bituminous Surface Treatment

LOCATION	THIS FISCAL YEAR	
	MILES	TONS OF DIX SEAL
Hwy. 10 to 7th Line, Oakville.....		60
Vicinity of Steeles Avenue.....		805
TOTAL.....		865



## Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
9	Canadian National Railway and Canadian Pacific Railway overhead bridge (Black Horse Crossing), Tecumseth and Albion township, Lot 4 and 5, concession I.....	1964	1965	1965	Structural steel
50	Canadian Pacific Railway subway, Albion township, Lot 23 and 22, concession VII and VI.....	1964	1965	1965	Structural steel
401	Bridge 11, North York township, Lot 13, concession III and IV E.....	1965	1966	—	Post tensioned Cast-in-place Prestressed
10	Etobicoke Creek structure, Chinguacousy township, Lot 4, concession 1 E and 1 W.....	1964	1965	1965	Prestressed beam
10	Snelgrove Creek structure, Chinguacousy township, Lot 20, concession 1, E.H.S.	1965	1965	1965	Barrel arch culvert
10	Canadian Pacific Railway subway, Toronto township, Lot 16-15, concession 1, N.D.S.....	1965	1965	1965	Structural steel
401	Bridge 3, North York township, Lot 13, concession III and IV E.....	1965	1965	—	Post tensioned Cast-in-place Prestressed
401	Bridge 5, North York township, Lot 13, concession III and IV E.....	1965	1966	—	Prestressed
401	Bridge 6, North York township, Lot 13, concession III and IV E.....	1966	1966	—	Post tensioned Cast-in-place Prestressed
401	Bridge 8, North York township, Lot 13, concession III and IV E.....	1965	1966	—	Prestressed
401	Bridge 9, North York township, Lot 13, concession III and IV E.....	1966	1966	—	Post tensioned Cast-in-place Prestressed
401	Bridge 12, North York township, Lot 13, concession III and IV E.....	1966	1966	—	Post tensioned Cast-in-place Prestressed
401	Highland Creek, Scarborough township, Lot 21, concession II.....	1965	1965	1965	Twin box culvert



Hwy. 401 — 12 lanes of Macdonald-Cartier Freeway from Hwy. 400 to Hogg's Hollow — Map — opened December 16, 1965

## Concrete Base Pavement, Asphalt Top

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED	PAVE. WIDTH
				PREVIOUS YEARS			
401	Hwy. 400 interchange from Jane Street to west Wendell Avenue	1.00	1963	0.65	1.00	3,450	Various
401	From north limits Avenue Road to C.N.R. over- head bridge.....	2.57	1964	—	2.57	496	Various
401	C.N.R. overhead bridge east of Keele Street to Jane Street.....	1.90	1964	.95	1.90	1,906	Various
	TOTALS.....	5.47		1.60	5.47	5,852	

## Concrete Pavement

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	THIS FISCAL YEAR MILES COMPL.	SQ. YDS. PLACED	PAVE. WIDTH
				PREVIOUS YEARS			
401	Hwy. 400 interchange from Jane Street to west Wendell Avenue	1.00	1963	—	1.00	111,876	Various
401	From west limits Avenue Road to C.N.R. over- head bridge.....	2.57	1964	—	2.57	175,356	Various
401	C.N.R. overhead bridge east of Keele Street to Jane Street.....	1.90	1964	—	1.90	152,584	Various
Q.E.W.	2.9 and 4.9 mi. west of Hwy. 10.....	.06	1964	—	.06	1,160	Various
401	Hwy. 401 and Weston Road interchange.....	1.46	1965	—	.07	4,725	Various
401	Hwy. 401 east end of Bay- view interchange to east of Don River in- cluding Leslie Street interchange.....	1.97	1965	—	—	2,476	Various
	TOTALS.....	8.96			5.60	448,177	

### Crushed Gravel and Stone on Roads by Contract

WY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
01	Hwy. 400 interchange from Jane Street west Wendell Avenue.....	.66	279,959
01	From west limits Avenue Road to Canadian National Railway over- head bridge.....	1.39	210,222
50	Palgrave south 3.0 mi.....	3.03	181,969
10	Etobicoke Creek 4.9 mi. north Hwy. 401.....	91%	17,787
9	Canadian National Railway-Canadian Pacific Railway overhead bridge 3.0 mi. east Hwy. 50.....	.64	28,414
01	Canadian National Railway overhead bridge east of Keele Street to Jane Street.....	.89	168,575
01	Hogg's Hollow north and south structures collector roads.....	.14	1,590
10	From Hwy. 5 (Cooksville) north to Burnhamthorpe Road.....	1.62	141,846
01	2.9 mi. west of Hwy. 27 westerly to Hwy. 10 interchange.....	3.8	6,165
ev.			
bad			
35	From Hwy. 400 easterly to Hwy. 11.....	4.05	245,670
10	Brampton north limits, northerly to Victoria north limits including Snelgrove Creek structure.....	7.58	435,575
E.W.	1.6 mi. west Hwy. 10 (Mississauga Road) westerly 2.2 mi.....	1.76	118,820
01	Weston Road interchange.....	.31	60,980
01	Leslie Street easterly to west of Victoria Park Avenue.....	.24	83,163
01	Hogg's Hollow structure slope protection and drainage.....	100%	209
01	0.3 mi. east of McCowan Road.....	7%	20,036
01	West of Hogg's Hollow to east limit of Bayview Avenue interchange.....	.20	51,250
01	Black Creek bridge on Jane Street near Hwy. 400.....	100%	1,200
00	400 patrol yard.....	96%	72,294
E.W.	3.8 mi. west of Hwy. 10 westerly 3.3 mi.....	3.14	124,200
01	From east end of Bayview Avenue intersection to east of Don River including the Leslie Street interchange.....	.35	37,779
00	Hwy. 400 and Jane Street interchange 0.94 mi.....	—	1,026
00	Service centre (400-1) 2.0 mi. north of Maple Sideroad.....	.26	14,730
01	Islington Avenue interchange 0.30 mi. west of Humber River to Kipling Avenue.....	.10	21,182
—	Department of Highways, Downsview.....	100%	6,857
	TOTALS.....	30.16	2,331,498

### Crushed Gravel and Stone on Roads by Department's Forces

WY. No. ar.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
	Various throughout district various locations.....	—	19,384



## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	MILES COMPL. THIS YEAR
401	Hwy. 401 interchange from Jane Street to west Wendell Avenue.....	1.00	1963	.36	.64
401	From west limits Avenue Road to Canadian National Railway overhead bridge.....	2.57	1964	2.21	.36
50	Palgrave south 3.0 mi.....	3.06	1964	1.07	1.99
10	Etobicoke Creek 4.9 mi. north Hwy. 401.....	—	1964	20%	80%
9	Canadian National Railway-Canadian Pacific Railway overhead bridge 3.0 mi. east of Hwy. 50.....	.75	1964	.41	.34
7	Bathurst Street to Hwy. 400.....	3.80	1964	3.72	.08
401	Canadian National Railway overhead bridge east of Keele Street to Jane Street.....	1.90	1964	1.71	.19
401	Hogg's Hollow north and south structures collector roads.....	.31	1964	.20	.11
10	From Hwy. 5 (Cooksville) north to Burnhamthorpe Road.....	1.63	1965	.01	1.62
Dev. Road					
735	From Hwy. 400 easterly to Hwy. 11.....	6.05	1965	—	6.05
10	Brampton north limits, northerly to Victoria north limits, including Snelgrove Creek structure.....	7.58	1965	—	7.28
Q.E.W.	1.6 mi. west Hwy. 10 (Mississauga Road) westerly 2.2 mi.....	2.30	1965	—	2.00
401	Weston Road interchange from Wendell Avenue to 0.30 mi. west of Humber River 0.89 mi.....	1.46	1965	—	1.12
401	Leslie Street easterly to immediately west of Victoria Park Avenue including Don Valley Parkway interchange.....	1.73	1965	—	.97
401	Hogg's Hollow structure slope protection and interchange.....	—	1965	—	100%
401	0.3 mi. east of McCowan Road.....	—	1965	—	100%
401	Hwy. 401 west of Hogg's Hollow to east limit of Bayview Avenue interchange.....	1.85	1965	—	.28
Jane Street	Black Creek bridge on Jane Street near Hwy. 400.....	—	1965	—	100%
Q.E.W.	3.8 mi. west of Hwy. 10, westerly 3.3 mi.....	3.30	1965	—	1.32
401	From east end of Bayview Avenue interchange to east of Don River including Leslie Street interchange.....	1.97	1965	—	.83
400	Hwy. 400 and Jane Street interchange.....	0.94	1965	—	.70
400	Service centre (400-1) 2.0 mi. north of Maple Side Road west of Hwy. 400.....	.85	1965	—	.60
2	Hwy. 2 Rouge River bridge 0.8 mi. east of Metro Toronto east limits.....	0.59	1965	—	.43
401	Hwy. 401 and Islington Avenue interchange.....	1.98	1965	—	.06
—	D.H.O., Downsview.....	—	1965	—	95%
TOTALS.....		45.62		9.69	26.97

## Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	THIS FISCAL YEAR	
				PREV. YRS.	MILES COMPL.	TONS PLACED
401	Hwy. 400 interchange from Jane Street to Wendell Avenue.....	1.00	1963	.36	.66	279,959
401	From west limits Avenue Road to Canadian National Railway overhead bridge	2.57	1964	1.18	1.39	210,222
50	Palgrave south 3.0 mi.....	3.06	1964	.03	3.03	179,406
10	Etobicoke Creek 4.9 mi. north of Hwy. 401.....	—	1964	9%	91%	17,787
9	Canadian National Railway-Canadian Pacific Railway overhead bridge 3.0 mi. east of Hwy. 50.....	.75	1964	.11	.64	28,143
401	Canadian National Railway overhead bridge east of Keele Street to Jane Street	1.90	1964	1.01	.89	168,575
401	Hogg's Hollow north and south structures collector roads.....	.31	1964	.17	.14	1,590
10	From Hwy. 5 (Cooksville) north to Burnhamthorpe Road.....	1.63	1965	.01	1.62	140,047
Dev. Road	From Hwy. 400 easterly to Hwy. 11.....	6.05	1965	—	4.05	245,670
735	Brampton north limits northerly to Victoria north limits including Snelgrove Creek structure.....	7.58	1965	—	7.58	435,575
10	1.6 mi. west Hwy. 10 (Mississauga Road) westerly 2.2 mi.....	2.3	1965	—	1.76	118,820
E.W.	Weston Road interchange.....	1.46	1965	—	.31	60,980
401	Leslie Street easterly to west of Victoria Park Avenue.....	1.73	1965	—	.24	83,163
401	Hogg's Hollow structure slope protection and drainage.....	—	1965	—	100%	209
401	0.3 mi. east of McCowan Road.....	—	1965	—	7%	20,036
401	West of Hogg's Hollow to east limits of Bayview Avenue interchange.....	1.85	1965	—	20%	51,250
401	Black Creek bridge on Jane Street near Hwy. 400.....	—	1965	—	100%	1,200
400	400 patrol yard.....	—	1965	—	96%	72,294
(E.W.)	3.8 mi. west of Hwy. 10 westerly 3.3 mi....	3.3	1965	—	3.14	124,200
401	From east end of Bayview interchange to east of Don River including Leslie Street interchange.....	1.97	1965	—	.35	37,779
400	Hwy. 400 and Jane Street interchange 0.94 mi.....	0.94	1965	—	—	1,026
400	Service (400-1) 2.0 mi. north of Maple Sideroad.....	0.85	1965	—	.26	14,730
401	Islington Avenue interchange 0.30 mi. west Humber River to Kipling Avenue	1.98	1965	—	.10	21,182
—	Department of Highways, Downsview.....	—	—	—	100%	6,857
TOTALS.....		41.23		2.87	26.16	2,320,700

## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
400	Sheppard Avenue patrol yard.....	Garage 9	Equipment	1965	—
10	Caledon patrol yard.....	Bay Office	Storage		
		Garage 5	Equipment	1965	—
		Bay Office	Storage		
401	Rouge patrol yard.....	Salt Shed	Salt Storage	1965	1965
401	Whitby patrol yard.....	Salt Shed	Salt Storage	1965	1965
10	Caledon patrol yard.....	Temporary	Patrol		
		Patrol	Crew Head		
		Office	Quarters	1965	1965
12	Beaverton patrol yard.....	Temporary	Patrol	1965	1965
		Patrol	Crew Head		
		Office	Quarters		
401	Kennedy Road patrol yard.....	Temporary	Patrol	1965	1965
		Patrol	Crew Head		
		Office	Quarters		
401	Keele Street .....	Fibre Glass	Housing	1965	1965
		Building	Traffic		
			Counter		
			Instrument		
401	1 mi. east of Junction Hwys. 401 and 48.....	Fibre Glass	Housing	1965	1965
		Building	Traffic		
			Counter		
			Instrument		

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	4	—	—
Calcium dust layer on gravel roads.....	—	—	—
Calcium for de-icing roads .....	—	—	—
Development roads built.....	—	—	—
Off-road parks maintained .....	—	—	—
Roads snowploughed and kept open, King's highways.....	—	—	777
Roads snowploughed and kept open, secondary highways.....	—	—	—
Roadside picnic places maintained.....	4	—	—
Routine maintenance, King's highways.....	—	—	777
Routine maintenance, secondary highways .....	—	—	—
Salt for de-icing roads (raw).....	—	39,200	—
Salt in sand, stockpiled.....	—	5,200	—
Sand for winter maintenance .....	—	117,257	—
Scale houses maintained .....	6	—	—
Seeding by department's forces .....	(acres)	—	107
Shrubs received and planted this year .....	1,204	—	—
Signs erected or replaced .....	10,549	—	—
Snow fence erected, dismantled, stored .....	—	—	82
Snow hedges planted this year .....	—	—	—
Traffic lights installed this year .....	230	—	—
Weed control .....	—	—	644
Zone painting on King's highways .....	(gals.)	22,507	—
Zone painting on secondary highways .....	(gals.)	—	—

**DISTRICT No. 7 — PORT HOPE****D. P. Collins, P.Eng., District Engineer****CONSTRUCTION**

During the fiscal year of 1965-66 work was completed on five carry-over contracts and on five new contracts. Work started on an additional seven contracts, to be carried over for completion during the construction season of 1966. Grading, drainage and granular base were completed on Highway 36 easterly for 5.62 miles, on Highway 2 (Beaverton by-pass) for 6.96 miles, and at the Sandbanks Provincial Park, 8.5 miles south of Bloomfield in Prince Edward County. Structures were erected at nine different locations and approaches graded and paved, including the Gull River, Highway 35 at Coboconk, the Trent Canal, Highway 121 at Fenelon Falls, two intersections with Highway 401 between Brighton and Trenton, and Highway 7A, east of Bethany. Channelized intersections were built at the north and south entrances to the Village of Orono on Highway 35/115, and hot mix paving and resurfacing was carried out on Highways 115, 35, 2, 401, in the Newcastle area, over a distance of 2.5 miles.

Work was started on grading and drainage for 3.6 miles on Highway 49, from Roblin Mills to the Quinte Skyway.

Work was started on grading, drainage and granular base for 4.87 miles on Highway 48, from Port Bolster to Highway 12.

Work was started on grading, drainage and granular base and hot mix paving on Highway 503 at the approaches to the Trent Canal tunnel north of Kirkfield.

Work was started on grading, drainage, granular base, hot mix paving and structure on Highway 401 and service road at Bennett Road, 1.6 miles east of Bowmanville.

Work was started on hot mix paving on Highway 12, Beaverton by-pass, for 8.23 miles.

A contract was awarded for the structure and approaches on Highway 2 at Trenton for a distance of 1.0 miles.

**MAINTENANCE**

During the past fiscal year three frame patrol offices, complete with toilet facilities and lunchroom, were constructed at Norwood, Lorneville and Codrington. Construction of a new five bay metal patrol garage commenced at Lorneville, with completion expected by the middle of the summer.

A new scale pit and modern scales were installed at the Department of Transport weigh scales on Highway 401 near Bowmanville.

The patrol yard and stockpiling area at our patrol garage south of Lindsay on Highway 35 was graded and paved, under contract 65-149.

Four contracts for stockpiling crushed gravel were let, one of which included the direct application of approximately 15,000 tons of crushed gravel to the shoulders.

Approximately 4,700 tons of H.L. 3 hot mix patching was undertaken on various highways throughout the district, including Highways 2, 7, 7B, 28, 30, 45, 115 and 401; 36 miles of surface treatment was done at various locations on Highways 36, 53 and 649; and 34 miles of bituminous prime on gravel roads was completed at various locations on Highways 7A, 46, 503, 505 and 507.



Day labour construction was carried out on two, one mile projects, one in the summer and the other in the winter, in the vicinity of Head Lake on Highway 503. The grade and alignment on these mile sections was improved to secondary road standards.

Pre-contract clearing was carried out by day labour on Highway 507 from Highway 28 to Selwyn.

The district forestry crew grass seeded approximately thirty-three acres, and planted 1,796 seedlings, trees and shrubs. An extensive program of weed spraying was carried out on 501 miles of highway. During the winter and summer the crew removed 279 dead or dangerous trees and a contract was completed for the removal of 1,053 dead elm trees.

Further development was undertaken at service centres E-3 and E-4 and a contract for placing approximately 25 new trees in service centre E-2 was completed.

No new living snow fence or snow hedges were planted this year.

The district sign shop replaced or erected 4,526 signs, an increase of 12% over the previous fiscal years and these new signs included the ten (10) large Macdonald-Cartier Freeway signs.

The zone painting crew zone painted 767 miles of highway, using the glass bead overlay method which has definitely proved to be an advantage as the lines are not deteriorating as quickly as previously.

A day labour program of bridge painting was carried out on thirteen (13) bridges and minor repairs were made to numerous bridges throughout the district.

The day labour project undertaken at the Belleville Bay bridge for the rehabilitation



Dev. Road 718 — West of Bobcaygeon. photo 7351 — (Port Hope)

of the swing mechanism and the steel grating started last fiscal year was completed this year.

Reconstruction of and resurfacing on existing connecting links was carried out by the towns of Cobourg, Lindsay, Port Hope, Bloomfield, Fenelon Falls, Omemee, City of Peterborough and the town of Picton.

Fifteen off-road parks were maintained by patrol crews along with seventy-eight (78) roadside picnic sites.

Numerous day labour projects were carried out at various locations within the district, including the following:

Highway 30—emergency bridge repairs to the Trent River bridge in the village of Trent River.

Highway 36 in Bobcaygeon—extensive repairs were undertaken to the footings of the abutments and piers, using a method of intrusion placed concrete.

Highway 401—Shelter Valley and Little Lake—extensive repair work to the slopes of both these locations were undertaken.

The district experimented using an infra-red pavement burner to remove the numerous bumps along Highway 2 and this, to date, has proved to be satisfactory.



Hwy. 35 — Balsam Lake at Coboconk. photo 7318 — (Port Hope)

## Automatic Signals at Railway Crossings

Hwy. No.	RAILWAY	LOCATION	TYPE
45	C.N.R.	Crossing at Hastings.....	2 (changed)

## Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
2	Sideroad entrances throughout Darlington township.....	—	1965	—	—	155.60
2	Various from Port Hope to Trenton.....	—	1965	—	—	290.00
7	Various from 2 mi. east Havelock- Keene Road and railroad cross- ing east of Omemee.....	—	1965	—	—	1,117.00
7B	Various from Peterborough north limits, 1.0 mi. west Chemong Road.....	—	1965	—	—	190.00
12TCH	Beaverton by-pass.....	1.56	1965	—	1.56	6,075.00
28	Parking lots, district office, Port Hope.....	—	1965	—	—	931.85
28	Various from Port Hope to Fraser- ville.....	—	1965	—	—	865.00
30	Various from Meyersburg to Healey Falls Road.....	—	1965	—	—	287.00
35	Village of Cobocok.....	0.50	1965	—	0.50	1,751.12
35 & 115	Interchange improvement north and south entrances Orono.....	0.75	1965	—	0.75	971.00
35, 115, 401	Newcastle area.....	3.04	1965	—	3.04	10,044.76
45	Various from Baltimore to Nor- wood.....	—	1965	—	—	316.00
115	Various from 1.3 mi. east of Jct. Hwy. 28 and 115.....	—	1965	—	—	105.00
121	Village of Fenelon Falls.....	0.05	1965	—	0.05	326.36
401	Underpass County Road 26 to Brighton.....	0.93	1965	—	0.93	1,839.75
401	Lovett Road underpass 4.9 mi. west of Hwy. 33.....	0.44	1965	—	0.44	1,370.00
401	Various from Jct. Hwy. 33 (Tren- ton)-Newtonville interchange.....	—	1965	—	—	1,754.49
Park Access Road	Sandbanks Provincial Park 8.5 mi. south of Bloomfield.....	0.90	1965	—	0.90	2,732.14
TOTALS.....		8.17			8.17	31,122.07

## Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	MILES IN JOB	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
503	From 5.5 mi. west of Norland westerly 2.0 mi.	2.0	4.5	2.0	3,700



## Bituminous Prime on Gravel Roads

HWY. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALS. BIT. USED	TONS SAND USED
7A	Jct. Hwy. 115 west.....	0.90	2,215	85.00
46	Jct. Hwy. 505 west.....	1.50	3,691	141.67
03	Uphill east.....	7.50	18,447	708.02
03	Sebright south.....	8.20	20,175	774.35
03	Norland east.....	0.50	1,233	47.33
05	Uphill to Victoria Road.....	10.50	25,827	991.36
07	South Jct. Hwy. 36 to Jct. Hwy. 28.....	5.00	12,298	472.02
TOTALS.....		34.10	83,886	3,219.75

## Bituminous Surface Treatment

HWY. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALS. BIT. USED	TONS CHIPS USED
6	Dunsford to Bobcaygeon.....	10.00	29,475.00	1,325.08
3	Kinmount to Norland.....	9.30	27,415.00	1,232.49
3	Norland westerly.....	5.90	17,395.00	782.00
9	Jct. Hwy. 36 and Hwy. 121.....	11.00	32,430.00	1,457.96
TOTALS.....		36.20	106,715.00	4,797.53

## Bridges Built

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
A	Trout Creek bridge, 1.2 mi. east of Bethany.....	1965	1965	1965	Reinforced concrete
CH	White's Creek bridge, 2 mi. south of north end Beaverton by-pass.....	1964	1965	1965	Post tensioned re- inforced concrete
CH	Beaverton River bridge, Beaverton by-pass.....	1964	1965	1965	Post tensioned re- inforced concrete
CH	Beaverton River bridge, County Road 15.....	1964	1965	1965	Post tensioned re- inforced concrete
	Gull River bridge, village of Cobo- conk.....	1964	1965	1965	Reinforced concrete Prestressed beams
2	Trent Canal bridge, village of Fenelon Falls.....	1964	1965	1965	Reinforced concrete Prestressed beams
3	County Road 26 underpass, 1.3 mi. east of Hwy. 30.....	1965	1965	1965	Reinforced concrete Prestressed girder
0	Lovett Road underpass, 4.9 mi. west of Hwy. 33.....	1965	1965	1965	Reinforced concrete Prestressed beams



## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2 & 7	Courtice to Trenton and Norwood to Havelock.....	58.00	14,368.87
7A	Trout Creek bridge 1.2 mi. east of Bethany.....	0.30	3,652.47
12TCH	Beaverton by-pass.....	6.96	5,808.91
12TCH	Beaverton by-pass.....	—	10,001.20
12TCH	Beaverton by-pass.....	5.43	80,271.57
12TCH	Beaverton by-pass Beaverton River bridges on Hwy. 12 and County Road 15.....	0.46	5,678.00
12TCH	Beaverton by-pass.....	1.23	2,864.00
28 & 115	Department of Highways patrol yards at Highways 28 and 115 and 115 and 401.....	—	12,962.06
35	Village of Coboconk.....	0.50	4,491.77
35	Department of Highways patrol yard 2 mi. south of Lindsay.....	—	723.31
35 & 115	Interchange improvement north and south entrances to Orono.....	0.58	4,900.00
35, 115, 401	Newcastle area.....	3.04	9,126.69
36	Nogie's Creek village to secondary Hwy. 507.....	1.52	15,873.10
46	From secondary Hwy. 503 to Hwy. 35.....	5.84	48,868.00
46	Department of Highways yards at Lorneville and Coboconk.....	—	7,978.31
46	Department of Highways yards at Lorneville and Coboconk.....	1.30	1,254.00
49	Roblin Mills to Cronk's Ferry.....	0.13	163.02
115	Jct. Hwy. 35 and 115 (Enterprise Hill).....	0.05	588.56
121	Village of Fenelon Falls.....	0.93	8,343.49
401	Underpass at County Road 26 to Brighton.....	0.44	7,383.00
401	Lovett Road underpass 4.9 mi. west of Hwy. 33.....	0.04	777.00
401	Bennett Road interchange and service road.....	—	5,015.05
401	Department of Highways yard at Hwy. 401 and Grafton Road.....	—	14,005.16
503	Laxton township lots 13, 9, 10, con. 4 and 5.....	—	1,976.06
503	Jct. Hwy. 503 and Hwy. 505.....	0.53	4,500.00
503	Approaches to Trent Canal tunnel at Kirkfield.....	—	—
Park Access Road	Sandbanks Provincial Park 8.5 mi. south of Bloomfield.....	0.90	12,621.91
TOTALS.....		88.18	284,195.51

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
46	Patrol 13, jct. 46-35 to jct. 46-505.....	10.10	144.2
503	Patrol 13, jct. 503-121 to jct. 503-35.....	.50	70
503	Patrol 13, jct. 503-35 to jct. 503-505.....	6.19	—
503	Patrol 12, jct. 46-503 to jct. 503-505.....	16.38	4,659.2
505	Patrol 12, jct. 46-505 to jct. 503-505.....	11.00	124.6
507	Patrol 7, jct. 28-507 to jct. 36-507.....	12.48	3,802.4
TOTALS.....		56.65	8,800.4

## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
7A	Trout Creek bridge 1.2 mi. east of Bethany....	0.30	1965	—	0.30
12TCH	Beaverton by-pass.....	6.96	1964	3.62	3.34
2TCH	Beaverton by-pass, Beaverton River bridges on Hwy. 12 and County Road 15.....	0.56	1965	0.08	0.48
35	Department of Highways patrol yard 2 mi. south of Lindsay.....	—	1965	—	—
35	Village of Coboconk.....	0.50	1965	—	0.50
35 & 15	Interchange improvement at north and south entrances to Orono.....	0.85	1965	—	0.51
5, 115, 01	Newcastle area.....	3.04	1965	—	3.04
36	From Nogie's Creek village to Secondary Hwy. 507.....	5.62	1964	5.28	0.34
46	From Secondary Hwy. 503 to Hwy. 35.....	9.42	1965	—	5.46
48	Port Bolster to Beaverton by-pass.....	4.87	1965	—	1.95
49	Roblin Mills to Cronk's Ferry.....	3.60	1965	—	2.63
21	Village of Fenelon Falls.....	0.05	1965	—	0.05
01	Underpass at County Road 26 to Brighton.....	0.93	1965	—	0.93
01	Lovett Road underpass 4.9 mi. west of Hwy. 33	0.44	1965	—	0.44
01	Bennett Road interchange and service road.....	1.40	1965	—	0.08
03	Approaches to Trent Canal tunnel at Kirkfield	1.06	1965	—	0.38
ark ccess oad	Sandbanks Provincial Park 8.5 mi. south of Bloomfield.....	0.90	1965	—	0.90
	TOTALS.....	40.50		8.98	21.33



Hwy. 46 — West of Coboconk. photo 7316 — (Port Hope)

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
7A	Trout Creek bridge 1.2 mi. east of Bethany.....	0.30	1965	—	0.30	11,460.79
12TCH	Beaverton by-pass.....	6.96	1964	1.60	5.36	235,028.85
12TCH	Beaverton by-pass Beaverton River bridges on Hwy. 12 and County Road 15.....	0.56	1965	0.03	0.53	21,931.00
35	Village of Coboconk.....	0.50	1965	—	0.50	10,549.34
35	Department of Highways patrol yard 2 mi. south of Lindsay.....	—	1965	—	—	525.30
35 & 115	Interchange improvement at north and south entrances to Orono....	0.85	1965	—	0.51	9,924.20
35, 115, 401	Newcastle area.....	3.04	1965	—	3.04	5,787.25
46	From secondary Hwy. 503 to Hwy. 35.....	9.42	1965	—	6.12	131,609.00
48	Port Bolster to Beaverton by-pass	4.87	1965	—	1.46	37,256.00
115	Jct. Hwy. 115 and 35 (Enterprise Hill).....	0.13	1965	—	0.13	1,031.70
121	Village of Fenelon Falls.....	0.05	1965	—	0.05	1,249.63
401	Underpass at County Road 26 to Brighton.....	0.93	1965	—	0.93	19,212.66
401	Lovett Road underpass 4.9 mi. west of Hwy. 33.....	0.44	1965	—	0.44	18,755.60
401	Bennett Road interchange and service road.....	1.40	1965	—	0.39	1,409.00
503	Approaches to Trent Canal tunnel at Kirkfield.....	1.06	1965	—	0.28	5,371.00
	TOTALS.....	30.51		1.63	20.04	511,101.32

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
7TCH	Norwcod.....	Frame	Office, rest room and lunchroom	1965	1965
46	Lorneville (1 mi. north).....	Frame	Office, rest room and lunchroom	1966	1966
30	Codrington.....	Frame	Office, rest room and lunchroom	1966	1966

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	13	—	—
Calcium dust layer on gravel roads.....(bags)	580	—	—
Off-road parks maintained.....	15	—	—
Roads snowploughed and kept open, King's highways.....	15	—	636.70
Roads snowploughed and kept open, secondary highways.....	4	—	85.80
Roadside picnic places maintained.....	78	—	—
Routine maintenance, King's highways.....	—	—	636.70
Routine maintenance, secondary highways.....	—	—	85.80
Salt for de-icing roads.....(raw)	—	17,543	—
Salt in sand, stockpiled.....	—	5,623	—
Sand for winter maintenance.....(cubic yards)	52,939	—	—
Scale houses maintained.....	1	—	—
Seeding by department's forces.....(acres)	33.31	—	—
Shrubs received and planted this year.....	700	—	—
Signs erected or replaced.....	4,526	—	—
Snow fence erected, dismantled, stored.....	—	—	87.60
Weed control.....	—	—	501.20
Line painting on King's highways.....(gals.)	—	10,183	707.40
Line painting on secondary highways.....(gals.)	—	563	60.00



**DISTRICT No. 8 — KINGSTON**

**E. A. Cash, P.Eng., District Engineer**

**CONSTRUCTION***Macdonald-Cartier Freeway—Highway 401*

West of Kingston two service centres were completed and began serving the public.

East of Gananoque work continued on the major grading and structures contract awarded last year. Two structures were completed, one of which was opened to traffic on a re-aligned section of Highway 2 at the intersection of the Freeway.

Three more contracts for grading and structures were awarded, work on which progressed through the winter. By the end of the year over a million cubic yards of rock had been excavated on the combined contracts. An electrically-powered, seventy ton, front end loader with a bucket of twenty cubic yards capacity was used almost exclusively for removing rock on one of these contracts.

Structures to carry two minor roads over Highway 401 near Prescott were begun and one of these was opened to traffic. A large proportion of the concrete work was done during the winter, the structures being completely enclosed by a protective housing.

*Highway 49*

After a fairly severe winter, construction of the piers for the bay of Quinte skyway began as soon as the ice melted. The foundations of the piers consist of steel caissons, filled with tremie concrete, founded on rock in depths of water up to forty feet. Structural steel was 99% complete at the end of the fiscal year.

*Highway 7, Trans Canada Highway*

The passage of Trans Canada Highway through traffic will be expedited and local traffic will be facilitated, particularly in conducting business in the village of Madoc, by a contract let for the construction of a by-pass on which grading has reached an advanced stage.

*Highway 37*

The south abutment of the bridge over Moira River has been subsiding for a number of years and the difficult operation of extending the deck and building a new abutment was completed without serious interruption to traffic. Grading and paving was completed for over three miles southerly from the bridge. Seeding and mulching was carried out under a separate contract.

*Highway 133*

This is a new highway which replaces existing county and township roads. Grading and granular base work was substantially completed, granular material being obtained from quarried limestone rock on account of the shortage of natural granular deposits in the area. The current contract includes concrete paving which has not yet commenced. Another contract covering the elimination of a railway crossing by means of a new structure and approaches, and also the widening of a bridge over Millhaven Creek, was almost completed.

*Highway 38*

Grading, drainage, and paving improvements were completed in the Hamlet of Verona.

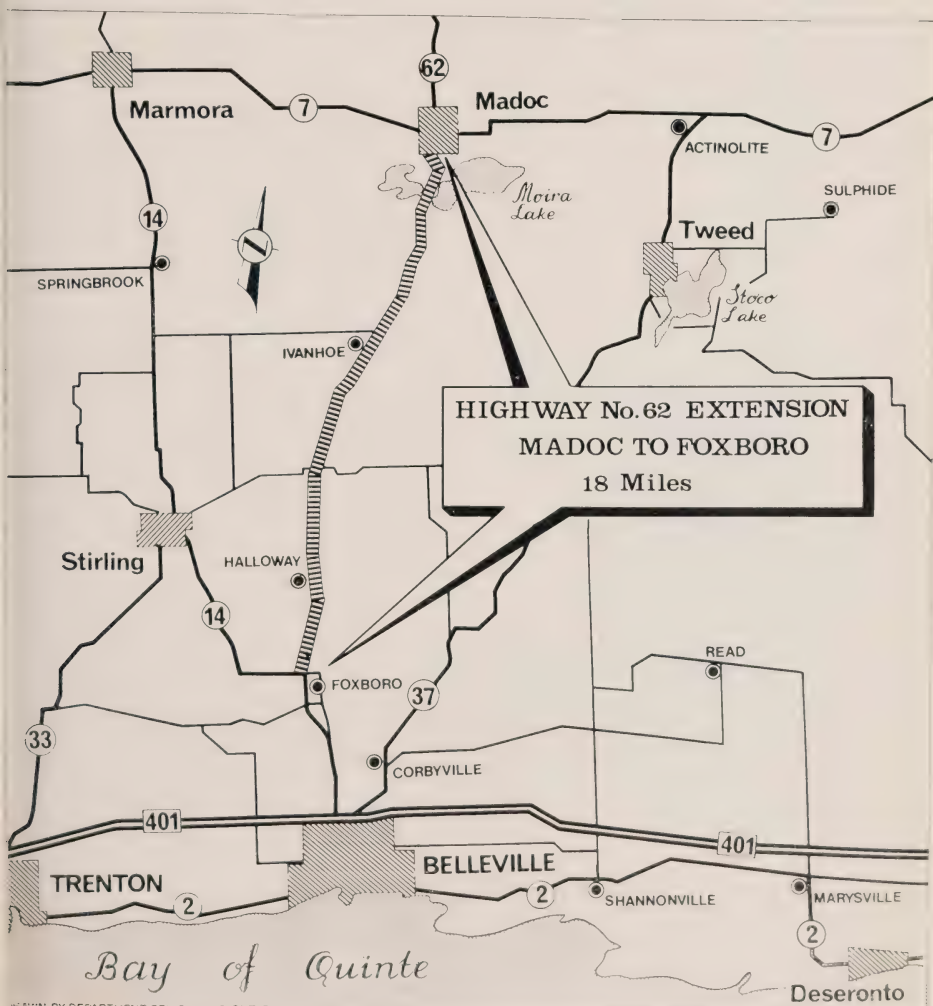
Work in this district generally was somewhat hampered by heavy rain in the fall.

## MAINTENANCE

As a part of the maintenance operations, two hot-mix patching contracts have been completed encompassing sections of various highways throughout the district. On Highways 42, 96 and secondary Highway 509, the pavement has been rehabilitated by means of a surface treatment.

Picnic areas are being developed in conjunction with two service centres opened this year on Highway 401. One partially completed area was extensively used by the travelling public this summer, and with more complete development of the two sites, added facilities will be available to the public in the coming year.

An extensive program for improvement and maintenance of the right-of-way on 755 miles of highway was carried out. This included seeding of 253 acres, planting of 2,827 trees, shrubs and seedlings, and weed spraying on 432 miles of the highway system. In addition to the normal removal of dead and dangerous trees, a total of 163 diseased elm were cut, treated and burned.



The Glenora and Wolfe Island ferry service connecting provincial highways were successfully operated throughout the year. The "Upper Canada", with a capacity of 15 cars, was added to the complement in the fall.

The highway system in the district was increased by 49 miles with the alteration of district boundaries and the assumption of 6 miles of new Highway 133.

New maintenance yards were developed at Kaladar and Belleville to improve the winter maintenance operations. Work was commenced late in the year on the construction of a patrol garage at the Verona yard.

#### Automatic Signals at Railway Crossings

HWY.	RAILWAY	LOCATION	TYPE OF SIGNAL
38	C.P.R.	0.5 mi. north of Godfrey.....	2 flash. lights
38	C.P.R.	Hinchinbrooke.....	2 flash. lights, bells



Hwy. 37 — North of Corbyville. photo 7603 — (Kingston)



## Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR	
					MILES COMPL.	TONS PLACED
01	Hwy. 16 to County Road 22.....	—	1965	—	—	2,130
01	Gananoque easterly 4.61 mi.....	0.83	1965	—	0.83	1,557
01	Mervins Lane 0.8 mi. west Prescott	0.30	1965	—	0.30	430
01	7.45 mi. east, Hwy. 2 east 1.95.....	0.07	1965	—	0.07	783
01	Hwy. 38 westerly 7.24 mi.....	0.29	1965	—	0.29	1,170
2	Trenton easterly 1.90 mi.....	1.90	1964	1.90	1.90	5,407
7TCH	Madoc by-pass.....	—	1965	—	—	200
37	Corbyville to Moira River.....	3.30	1965	—	3.30	7,643
38	Village of Verona.....	1.15	1965	—	1.15	3,886
33	Millhaven to Hwy. 401.....	0.36	1965	—	0.36	750
	Counter Street patrol yard, King- ston.....	—	1965	—	—	2,491
	TOTALS.....	8.20		1.90	8.20	26,447

## Bituminous Mulch and Cold Mix

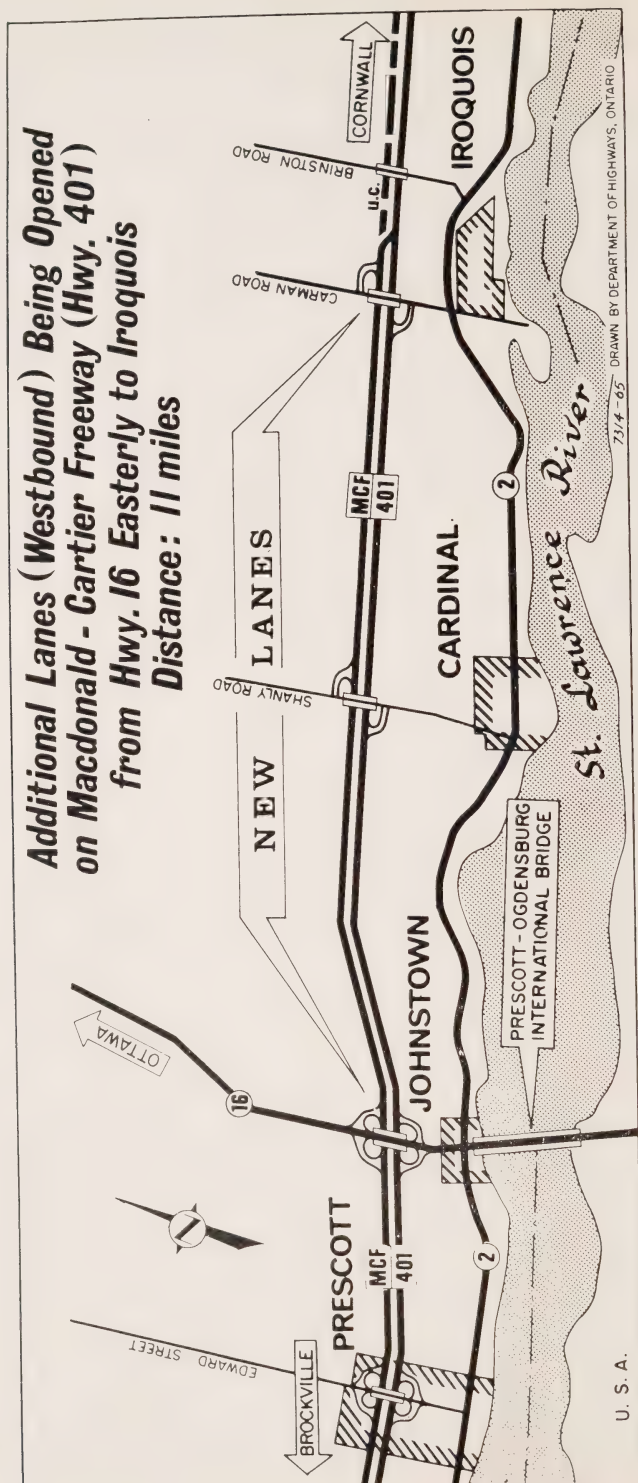
HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
01	Shanley Road, Cardinal to Hwy. 33, Trenton.....	129.21	103.50
2	Shanley Road, Cardinal to Hwy. 33, Trenton.....	115.62	114.95
7TCH	Hwy. 38 to Marmora.....	56.67	147.00
14	Hwy. 401 to Marmora.....	24.80	88.00
15	Hwy. 2 to Smith Falls.....	55.75	159.00
16	Johnstown to Beckett's Landing.....	24.96	59.00
29	Brockville to Smith Falls.....	28.93	94.87
32	Gananoque to Hwy. 15.....	11.03	62.00
33	Trenton to Stirling.....	13.45	47.00
33	Kingston to Glenora Ferry Dock.....	29.99	50.00
37	Hwy. 401 to Hwy. 7.....	25.96	87.00
38	Hwy. 2 to Hwy. 7.....	43.54	60.88
41	Napanee to Hwy. 7.....	31.65	65.00
42	Westport to Hwy. 29.....	31.44	121.88
43	Smiths Falls to south Gower-Mountain township line.....	26.85	87.50
49	Hwy. 401 to Bay of Quinte.....	1.48	3.00
52	Village of Madoc to Madoc-Tudor township line.....	11.94	36.50
55	Hornes Point to Hwy. 96.....	7.19	161.00
56	Quebec Head to west end Concession 2.....	19.90	59.00
53	Hwy. 33, Millhaven to Hwy. 401.....	6.15	10.00
7	New Hwy. 401 to International boundary.....	1.35	1.07
CONDARY HIGHWAYS			
32	Napanee to Marysville.....	7.83	19.00
49	Hwy. 7 to Snow Road.....	12.06	45.00
	TOTALS.....	717.75	1,682.15

## Bituminous Resurfacing of Old Pavement

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
41	Catarauqui river to Joyceville sideroad.....	—	419
2	Hwy. 401 east to Brockville.....	4.13	12,378
2	Village of Maitland.....	0.07	56
4	Village of Foxboro.....	—	37
r.	Eastern portion of district.....	—	7,226
r.	Western portion of district.....	—	7,879
	TOTALS.....	4.20	27,995



**Additional Lanes (Westbound) Being Opened  
on Macdonald - Cartier Freeway (Hwy. 401)  
from Hwy. 16 Easterly to Iroquois  
Distance: 11 miles**



Bituminous Surface Treatment

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BITUMULS USED	TONS CHIPS USED
42	Crosby to Westport.....	9.0	21,904	1070
96	Junction 95 and 96 easterly.....	15.0	38,941	1608
96	Village Wolfe Island easterly.....	5.0	14,150	276
SECONDARY HIGHWAYS				
509	Clarendon to Snow Road.....	6.0	14,602	714
509	Clarendon to Snow Road.....	4.0	11,315	222
TOTALS.....		39.0	100,912	3,890

Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
401	Westbound entrance at Gananoque.....	1964	1965	—	Simply supported prestressed beams
401	Hwy. 2 interchange underpass.....	1964	1965	1965	Simply supported structural steel beam
401	Lansdowne Road underpass.....	1965	—	—	Simply supported prestressed beams
401	Rockport Road overpass eastbound lane.....	1965	—	—	Rigid frame
401	Rockport Road overpass westbound lane.....	1965	—	—	Rigid frame
401	Blue Church Road underpass.....	1965	—	—	Simply supported post tensioned deck
401	Township road underpass (Mervins Lane).....	1965	1965	1965	Simply supported post tensioned deck
7TCH	Deer Creek structure.....	1965	1965	—	Rigid frame
7TCH	Madoc Creek structure.....	1965	1965	—	Rigid frame
37	Extension to Moira River bridge.....	1965	1965	1965	Simply supported structural steel beams
49	Bay of Quinte high level bridge.....	1965	—	—	Concrete sub-structure structural steel super structure concrete deck.
133	C.N.R. overhead at Ernestown.....	1965	1965	—	Simply supported structural steel beams
133	Millhaven Creek bridge (widening).....	1965	1965	1965	Simply supported structural steel beams

Concrete Pavement

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	THIS FISCAL YEAR		
				MILES COMPL.	SQ. YDS. PLACED	PAVE. WIDTH
401	From Hwy. 16 to County Road 22.....	5.38	1965	5.38	83,275	24
TOTALS.....		5.38		5.38	83,275	

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
401	Hwy. 16 to County Road 22.....	5.38	83,611
401	Gananoque easterly 4.61 mi.....	4.29	13,978
401	Mervin's Lane 0.8 mi. west Prescott.....	0.33	3,540
401	Blue Church Road.....	0.33	4,347
401	Hwy. 38 westerly 7.24 mi.....	0.29	968
401	7.45 mi. east Hwy. 2 east 1.95 mi.....	0.10	5,899
& 137			
401	Crystal Beach patrol yard.....	—	10,044
2	Trenton easterly 1.90 mi.....	—	305
2	Hwy. 401 east to Brockville.....	4.13	7,632
2	Village of Maitland.....	0.07	253
7TCH	Madoc by-pass.....	3.09	4,390
14	Village of Foxboro.....	—	146
14	Stirling patrol yard.....	—	8,000
37	Corbyville to Moira River.....	3.30	24,146
38	Hamelt of Verona.....	1.15	9,603
49	Bay of Quinte at Cronk's Ferry.....	0.38	23,121
133	Canadian National Railway overhead at Ernestown Station and Millhaven Creek bridge widening.....	0.48	2,139
133, 33	Millhaven to Hwy. 401.....	5.10	159,047
—	Counter Street patrol yard, Kingston.....	—	6,374
SECONDARY HIGHWAYS			
509	1 mi. north of Clarendon.....	—	7,990
TOTALS.....		28.42	375,533

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
401	Shanley Road—Cardinal to Hwy. 33—Trenton.....	129.21	4,841.3
2	Shanley Road—Cardinal to Hwy. 33—Trenton.....	115.62	3,745
7TCH	Hwy. 38 to Marmora.....	56.67	6,101
14	Hwy. 401 to Marmora.....	24.80	850
15	Hwy. 2 to Smiths Falls.....	55.75	2,816
16	Johnstown to Beckett's Landing.....	24.96	1,804
29	Brockville to Smiths Falls.....	28.93	1,574
32	Gananoque to Hwy. 15.....	11.03	273
33	Trenton to Stirling.....	13.45	458
33	Kingston to Glenora Ferry dock.....	29.99	1,660
37	Hwy. 401 to Hwy. 7.....	25.96	1,803
38	Hwy. 2 to Hwy. 7.....	43.54	419
41	Napanee to Hwy. 7.....	31.65	250
42	Westport to Hwy. 29.....	31.44	1,495
43	Smiths Falls to south Gower—Mountain township line.....	26.85	3,363
49	Hwy. 401 to Bay of Quinte.....	1.48	64
62	Village of Madoc to Madoc—Tudor township line.....	11.94	899
95	Hornes Point to Hwy. 96.....	7.19	2,814
96	Quebec Head to west end concession 2.....	19.90	1,041
133	Hwy. 33—Millhaven to Hwy. 401.....	6.15	340
137	New Hwy. 401 to International Boundary.....	1.35	—
SECONDARY HIGHWAYS			
502	Napanee to Marysville.....	7.83	404
509	Hwy. 7 to Snow Road.....	12.06	628
657	Hwy. 96 to Dawsons Point.....	1.36	5,600
TOTALS.....		719.11	43,309.3

## Grading and Culverts

HWY. No.	LOCATION	MILES	YEAR	MILES	MILES
		IN JOB	BEGUN	COMPL. PREV. YRS.	COMPL. THIS YR.
401	Gananoque easterly 4.61 mi.....	4.61	1964	0.84	3.77
401	Mervin's Lane 0.8 mi. west of Prescott.....	0.33	1965	—	0.33
401	From 3.45 mi. east of Hwy. 2 at Gananoque easterly 3.97 mi.....	3.97	1965	—	2.10
401	From 9.4 mi. east of Hwy. 2 at Gananoque easterly 6.40 mi.....	6.40	1965	—	0.90
401	Hwy. 38 westerly 7.24 mi.....	7.24	1965	—	5.14
137 & 401	From 7.45 mi. east of Hwy. 2 at Gananoque east 1.95 mi. and Hwy. 137.....	5.28	1965	—	1.51
401	Blue Church Road.....	0.52	1965	—	0.50
2	1.0 mi. west of Kingston.....	0.25	1965	—	0.25
2	Village of Maitland.....	0.07	1965	—	0.07
7TCH	Madoc by-pass.....	3.09	1965	—	2.94
14	Village of Foxboro.....	—	1965	—	—
37	Corbyville to Moira River.....	3.30	1964	3.10	.20
38	Hamlet of Verona.....	1.15	—	—	1.15
49	Bay of Quinte at Cronk's Ferry.....	1.15	1964	—	0.38
133 & 33	Millhaven to Hwy. 401.....	6.72	1965	—	6.72
133	C.N.R. overhead at Ernestown Station and Millhaven Creek bridge widening.....	0.48	1965	—	0.48
	Counter Street patrol yard, Kingston.....	—	1965	—	—
	TOTALS.....	44.56		3.94	26.44

## Granular Base on New Grading

HWY. No.	LOCATION	MILES	YEAR	MILES	THIS FISCAL YEAR	
		IN JOB	BEGUN	COMPL. PREV. YRS.	MILES COMPL.	TONS PLACED
401	Hwy. 16 to County Road 22.....	5.38	1965	—	5.38	97,105
401	Gananoque easterly 4.61 mi.....	4.61	1964	0.32	4.29	37,485
401	Mervin's Lane 0.8 mi. west Prescott	0.33	1965	—	0.33	8,235
401	From 3.45 mi. east of Hwy. 2 at Ga- nanoque easterly 3.97 mi.....	3.97	1965	—	1.50	16,453
401	From 9.40 mi. east of Hwy. 2 at Ga- nanoque easterly 6.40 mi.....	6.40	1965	—	—	3,131
401	Blue Church Road.....	0.52	1965	—	0.33	9,406
401	Hwy. 38 westerly 7.24 mi.....	7.29	1965	—	0.29	968
137, 401	7.45 mi. east of Hwy. 2 easterly 1.95 mi.....	5.28	1965	—	0.10	13,377
2	Trenton easterly 1.90 mi.....	1.90	1964	—	1.90	305
2	Village of Maitland.....	0.07	1965	—	0.07	253
2	West of Kingston.....	0.25	1965	—	0.21	455
7TCH	Madoc by-pass.....	3.09	1965	—	3.09	21,343
14	Village of Foxboro.....	—	1965	—	—	211
37	Corbyville to Moira River.....	3.30	1964	0.20	3.10	118,631
38	Hamlet of Verona.....	1.15	1965	—	1.15	26,183
49	Bay of Quinte at Cronk's Ferry.....	1.15	1965	—	0.38	23,121
133, 33	Millhaven to Hwy. 401.....	6.72	1965	—	5.10	159,047
133	C.N.R. overhead at Ernestown and Millhaven Creek bridge widening..	0.48	1965	—	0.48	3,867
	Counter Street patrol yard Kingston	—	1965	—	—	10,267
SECONDARY HIGHWAYS						
509	1 mi. north of Clarendon.....	—	1965	—	—	208
	TOTALS.....	51.89		0.52	27.70	550,051

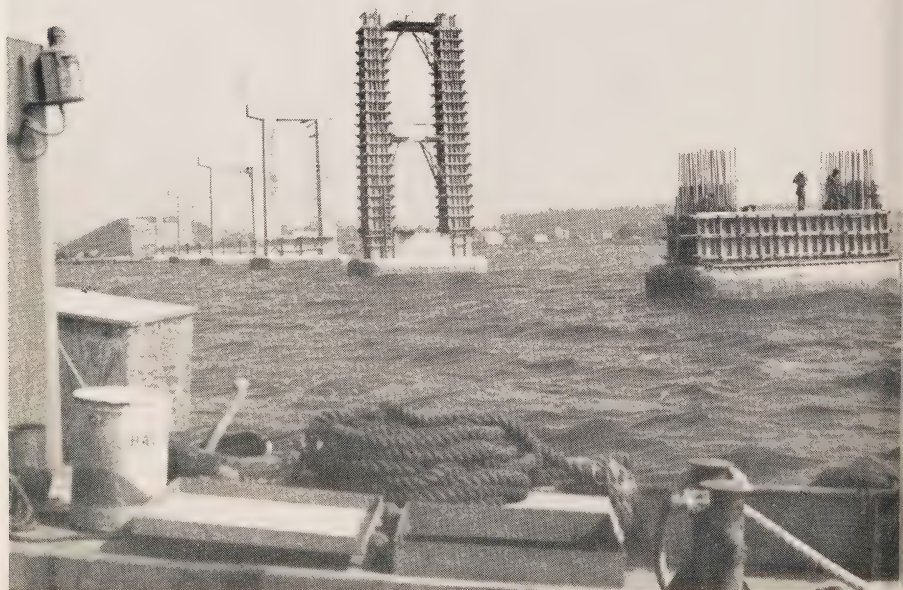


## Granular Base Where No Grading Done

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	THIS FISCAL YEAR	
				COMPL. PREV. YRS.	MILES COMPL.	TONS PLACED
2	Hwy. 401 easterly to Brockville.....	4.13	1965	—	4.13	7,632
	TOTALS.....	4.13	—	—	4.13	7,632

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLET
2	Westbrook patrol yard.....	Shed	Salt	1965	1965
2	Crystal Beach patrol yard.....	Shed	Tool	1965	1965
7TCH	Kaladar patrol yard.....	Shed	Salt	1965	1965
7TCH	Kaladar patrol yard.....	Shed	Tractor	1965	1965
14	Belleville patrol yard.....	Shed	Salt	1965	1965
14	Belleville patrol yard.....	Shed	Tractor	1965	1965
15	Seeley's Bay patrol yard.....	Shed	Salt	1965	1965
15	Smiths Falls patrol yard.....	Shed	Salt	1965	1965
15	Barriefield patrol yard.....	Shed	Tool	1965	1965
29	Toledo patrol yard.....	Shed	Salt	1964	1965
38	Verona patrol yard.....	Garage and Office	Patrol	1965	—



Hwy. 41 — Quinte Skyway. photo 7602 — (Kingston)

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	—	—	—
Calcium dust layer on gravel roads.....	—	28.50	—
Calcium for de-icing roads.....	—	—	—
Development roads built.....	—	—	42.04
Off-road parks maintained.....	15	—	—
Roads snowploughed and kept open, King's highways.....	—	—	841.93
Roads snowploughed and kept open, secondary highways.....	—	—	21.05
Roadside picnic places maintained.....	58	—	—
Routine maintenance, King's highways.....	—	—	841.93
Routine maintenance, secondary highways.....	—	—	21.05
Salt for de-icing roads.....(raw)	—	13,520	—
Salt in sand, stockpiled.....	—	3,548	—
Sand for winter maintenance.....	—	38,080	—
Scale houses maintained.....	3	—	—
Seeding by department's forces.....(acres)	253.61(3)	—	—
Shrubs received and planted this year.....	9,827(2)	—	—
Signs erected or replaced.....	4,125	—	—
Snow fence erected, dismantled, stored.....	—	—	26.85
Snow hedges planted this year.....	—	—	—
Traffic lights installed this year.....	2	—	—
Weed control.....	907(1)	—	432
Zone painting on King's highways.....(gals.)	13,305	—	960.3
Zone painting on secondary highways.....(gals.)	130	—	8.1

(1)—Gallons of weed killer.

(2)—Shrubs and trees, various types.

(3)—202.61 acres seeded by department forces, 51 acres by contract.

"QUINTE FERRY"						"QUINTE LOYALIST FERRY"						TOTALS OF BOTH FERRIES
MONTHS	DAYS WORKED	TRIPS	CARS	TRUCKS	TOTAL	MONTHS	DAYS WORKED	TRIPS	CARS	TRUCKS	TOTAL	
April	Not operating					April	30	1,345	15,987	998	16,985	16,985
May	11	478	4,600	156	4,756	May	31	1,301	17,474	1,206	18,680	23,436
June	30	1,394	13,294	516	13,810	June	30	999	12,017	884	12,901	26,711
July	31	1,545	20,339	524	20,863	July	31	1,092	20,598	804	21,402	42,265
August	31	1,475	18,907	573	19,480	August	31	1,079	19,596	809	20,405	39,885
September	30	1,375	12,623	571	13,194	September	30	1,002	11,429	793	12,222	25,416
October	31	1,352	11,763	517	12,280	October	26	822	7,955	505	8,460	20,740
November	30	1,243	7,590	449	8,039	November	28	852	6,389	519	6,908	14,947
December	31	1,161	7,360	382	7,742	December	26	1,008	6,493	497	6,990	14,732
January	8	82	222	8	230	January	30	1,182	11,028	828	11,856	12,086
February	Not operating					February	26	1,116	10,225	723	10,948	10,948
March	Not operating					March	31	1,313	14,047	943	14,990	14,990
TOTALS	233	10,105	96,698	3,696	100,394	TOTALS	350	13,111	148,238	9,509	162,747	263,141

## "QUINTE"

Peak Traffic: July 25, 1965

Trips.....	60
Cars.....	1,028
Trucks.....	1

Total days worked.....	233
Total trips.....	10,105
Total cars carried.....	96,698
Total trucks carried.....	3,696

## "LOYALIST"

Peak Traffic: July 4, 1965

Trips.....	45
Cars.....	1,074
Trucks.....	6

Total days worked.....	350
Total trips.....	13,111
Total cars carried.....	148,238
Total trucks carried.....	9,509

"WOLFE ISLAND FERRY"						"UPPER CANADA FERRY"						TOTAL OF BOTH FERRIES		
MONTHS	DAYS WORKED	TRIPS	CARS	TRUCKS	PEDES-TRIANS	TOTAL	MONTHS	DAYS WORKED	TRIPS	CARS	TRUCKS	PEDES-TRIANS	TOTAL	
April	26	279	5,378	254	4,977	10,609	April	—	—	—	—	—	—	
May	22	389	7,878	444	11,252	19,574	May	—	—	—	—	—	—	
June	30	416	9,126	560	8,294	17,980	June	—	—	—	—	—	—	
July	31	454	11,703	641	10,524	22,868	July	—	—	—	—	—	—	
August	31	496	11,756	522	9,706	21,984	August	—	—	—	—	—	—	
September	30	480	9,499	774	7,198	17,471	September	—	—	—	—	—	—	
October	28	417	8,223	580	5,038	13,841	October	5	498	1,031	90	1,169	2,290	
November	30	475	8,160	624	4,928	13,712	November	—	—	—	—	—	—	
December	31	495	8,278	546	4,611	13,435	December	—	—	—	—	—	—	
January	31	484	6,117	514	3,476	10,107	January	—	—	—	—	—	—	
February	28	439	5,671	419	3,299	9,389	February	—	—	—	—	—	—	
March	26	410	6,203	390	3,132	9,725	March	1	16	180	26	252	458	
TOTALS	344	5,234	97,992	6,268	76,435	180,695	TOTALS	6	514	1,211	116	1,421	2,748	
														183,443

"WOLFE ISLAND"

Peak Traffic: July 10, 1965					Peak Traffic: October 27, 1965				
Trips .....	17	Trips .....	16		Trips .....	16			
Cars .....	462	Cars .....	462		Cars .....	252			
Trucks .....	10	Trucks .....	10		Trucks .....	25			
Pedestrians .....	449	Pedestrians .....	449		Pedestrians .....	251			
Total days worked .....					Total days worked .....				
Total trips .....					Total trips .....				
Total cars carried .....					Total cars carried .....				
Total trucks carried .....					Total trucks carried .....				
Total pedestrians carried .....					Total pedestrians carried .....				

"UPPER CANADA"



**DISTRICT No. 9 — OTTAWA**

L. E. Walker, P.Eng., District Engineer

**CONSTRUCTION**

Highway 2—Wood Creek bridge and approaches were completed and opened to traffic.

Highways 7 and 15—Resurfacing of 8.8 miles from Ashton Station to Stittsville was completed.

Highways 7 and 15—A grading granular base, hot mix paving and structure contract was commenced through Bells Corners in the fall of 1965.

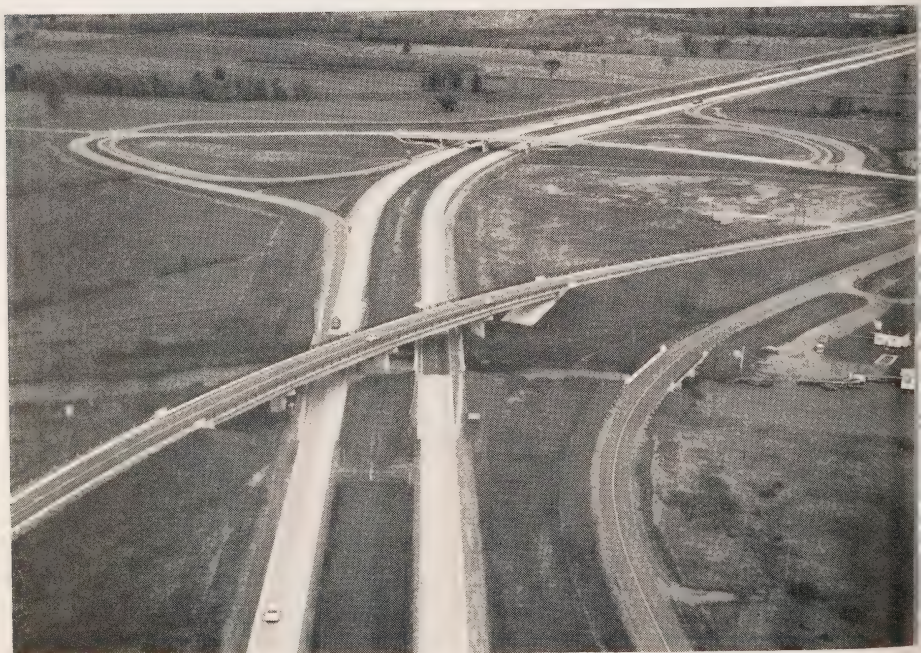
Highways 15 and 29—Resurfacing of 8.6 miles from Smiths Falls to Franktown was completed.

Highway 16—Carsonby Creek structure and approaches were completed and opened to traffic.

Highway 17—Paving of the 13 miles of new Highway 17 from Highway 44 to Antrim completed and the road opened to traffic. Work also commenced on the section of road from Antrim to Highway 29.

Highways 29 and 7B—During 1965 grading was undertaken and sewers and street lighting installed through Carleton Place. This project including paving, will be completed in the summer of 1966.

Highway 31—Highway 31 was reconstructed through the Hamlet of Vernon. This included asphalt roadway and parking lanes, concrete gutters, sidewalks, storm sewer



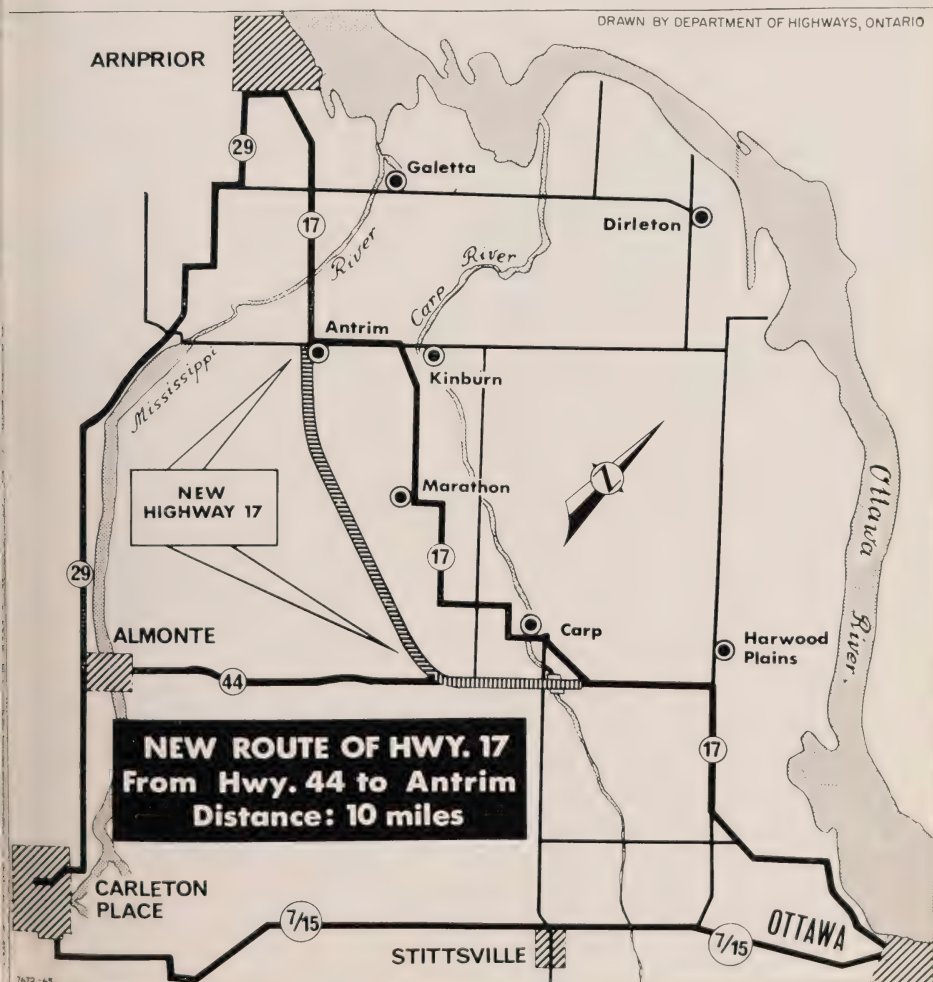
Hwy. 401 — Hwy. 2 and Interchange 128 each of Bainsville. photo 7765 — (Ottawa)

and street lighting. A channelization was constructed at Carleton county road 5 and the intersection was lighted.

Highway 60—A 7.75 mile grading contract from Highway 17 to Douglas commenced in the fall of 1965.

Highway 62—During 1965 the previously constructed grading contract on the Alice by-pass was paved.

Highway 401—Concrete paving of the westbound lane from Highway 16 easterly to Iroquois was completed and opened to traffic on October 19, 1965, a distance of 10 miles. Included in this paving project were two interchanges. Three structures were completed between Iroquois and Aultsville. A contract for a dual weigh scales at Lancaster was awarded and work started. This is to serve both Highway 2 and 401. A service centre at the Quebec border was completed and opened to the public. Work continued on three grading and structure contracts between Iroquois and Aultsville and it is anticipated that these contracts will be completed during the summer of 1966.



Highway 508—Improvements to the highway were carried out during 1965 in conjunction with construction on the Mountain Chute power development on the Madawaska River. One grading contract was completed during 1965 and the remaining work will be completed this year.

Ottawa Queensway Highway 17 T.C.—During the 1965 construction season work was carried out over a distance of 1.0 miles. The structure over the Rideau Canal was completed and concrete pavement placed from O'Connor Street to Concord Street. With the opening to traffic of this section of the Queensway traffic congestion in the Pretoria Avenue bridge area was relieved. Reconstruction of the south half of the Alta Vista drive interchange was started.

Stage 2—Ontario approaches to Macdonald-Cartier bridge—Stage 2 of the Ontario approaches to the Macdonald-Cartier bridge was completed and opened to traffic.

#### MAINTENANCE

1. 9.7 miles of Highway 17 (new highway) from Antrim to Highway 44 was opened to traffic in November 1965.
2. 10.3 miles of Highway 401 westbound lanes from Highway 16 to Johnstown to interchange 118 at Iroquois was opened to traffic in October 1965.
3. A new patrol yard at Carp on Highway 44 was started and 2 salt sheds, sand pad and yard grading was constructed. A new patrol garage is to be built in 1966 and yard development completed.
4. Work was started on the development of a new patrol yard site north of Eganville at the junction of Highways 41 and 60. This new yard will serve the Highway 41 and the Highway 60 patrols and was necessitated by the change in district boundaries which took place April 1, 1965.
5. Further landslides occurred on the south bank of the Ottawa River at the Cumberland Park on Highway 17 T.C. east of Ottawa which endangered the highway and a rock slope stabilization contract was called.

#### Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
401	C.N.R.	Summerstown county road .....	2 flashing lights and 2 short arm gates

#### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	THIS FISCAL YEAR	
				MILEAGE COMPL.	TONS PLACED
7B	Hwy. 7 north easterly through Carleton Place...	1.80	1964	.90	973.24
7, 15	1.5 mi. west of Ottawa city limits westerly 2.2 mi.	2.22	1965	.25	2,542.00
16	Carsonby Creek.....	0.44	1965	0.44	1,479.64
17	Junction Hwy. 44 westerly to Antrim.....	9.98	1965	9.98	40,436.00
31	From Vernon to county road 5.....	7.24	1965	7.24	8,962.43
43	Port Elmsley to Perth.....	6.49	1965	6.49	11,330.00
62	5 mi. west of Pembroke westerly 4.92 mi.....	4.92	1965	4.92	14,340.05
TOTALS.....				30.22	80,063.40



# ADDITIONAL MILEAGE BEING OPENED ON THE OTTAWA QUEENSWAY

Distance: 0.62 miles



Drawn by Department of Highways, Ontario.

7612-65



### Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS SAND USED
17	Chute-A-Blondeau to Hwy. 17.....	1.7	6,956.00	183.75
511	Calabogie to Brightside.....	5.1	18,742.00	746.64
TOTALS.....		6.8	25,698.00	930.39

### Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
7, 15	Ashton to Stittsville.....	8.8	30,068.26
29, 15	Smiths Falls to Franktown.....	8.64	19,197.87
44	Carp to Almonte.....	8.33	3,207.99
TOTALS.....		25.77	52,474.12

### Bituminous Surface Treatment

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BITUMULS USED	TONS CHIPS USED
17	Hawkesbury east limits to Chute-A-Blondeau.....	6.50	22,690.00	875.28
511	Calabogie to Brightside.....	21.00	67,770.00	2,750.60
508	Burnstown westerly 1 mi. }			
TOTALS.....		27.50	90,460.00	3,625.88



Hwy. 31 — At Vernon. photo 7579 — (Ottawa)

## Bridges Built

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
2	Woods Creek.....	1965	1965	1965	Reinforced concrete
16	Carsonby Creek.....	1965	1965	1965	Reinforced concrete
17	Rideau Canal structure Ottawa Queensway.....	1963	1965	1965	Precast beams
44	Carp River.....	1965	1965	1965	Reinforced concrete
01	Jct. of Hwy. 31, interchange 119.....	1964	1965	1965	Reinforced concrete
01	Church Road.....	1965	1965	1965	Reinforced concrete
STAGE 2—MACDONALD-CARTIER BRIDGE					
	Botler Street.....	1964	1965	1965	Reinforced concrete
	King Edward Avenue.....	1964	1965	1965	Reinforced concrete
	Redpath Street.....	1964	1965	1965	Reinforced concrete

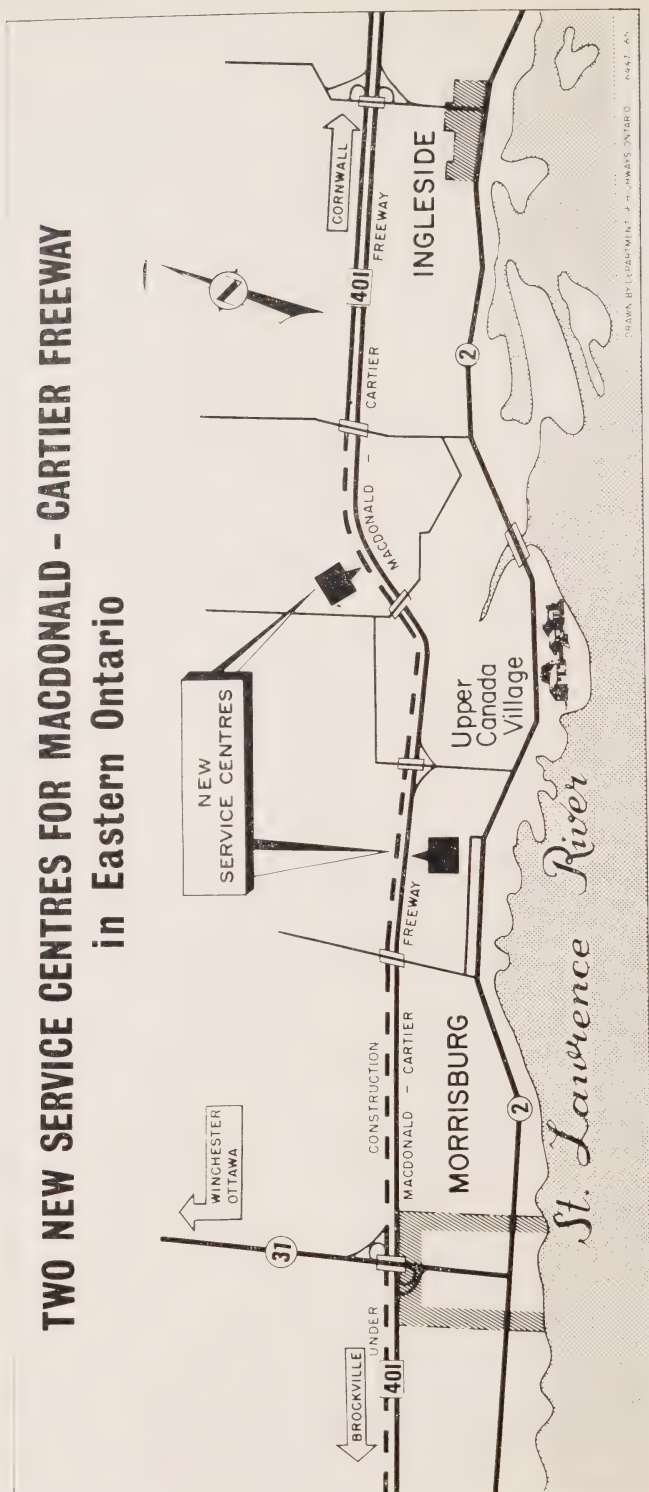
## Concrete Pavement

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	THIS FISCAL YEAR MILES COMPL.	SQ. YDS. PLACED	PAVEMENT WIDTH
17	Ottawa Queensway Metcalfe Street to Hurdmans bridge .....	1.36	1965	0.62	26,969.00	Dual Lane 24 feet
01	Hwy. 16 easterly to county road to Iroquois.....	10.96	1964	10.96	153,062.00	Single Lane 24 feet
	Macdonald-Cartier bridge stage 2 Ontario approaches.....	—	1964	—	34,785.00	Dual Lane 24 feet
	TOTALS.....	12.32		11.58	214,816.00	

## Crushed Gravel and Stone on Roads by Contract

HWY. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
2	Wood Creek.....	—	3,813.00
7B	Hwy. 7 north easterly through Carleton Place.....	0.90	21,755.00
7, 15	1.5 mi. west of Ottawa city limits westerly 2.2 mi.....	0.25	17,331.00
7, 15	Ashton Station northerly to Stittsville.....	7.70	35,932.67
way	Alta Vista interchange.....	—	1,738.00
15, 29	Smiths Falls to Franktown.....	8.64	31,088.75
17T.C.	From 4.7 mi. east Hwy. 34 to Quebec border.....	7.3	19,000.00
17	Antrim northerly to Hwy. 29.....	1.00	23,980.00
16	Carsonby Creek.....	0.44	6,770.10
31	From Vernon to county road 5.....	7.24	36,978.69
43	From Port Elmsley to Perth.....	—	1,990.00
62	5 mi. west of Pembroke westerly 4.92 mi.....	4.92	7,760.37
01	Hwy. 16 easterly to county road to Iroquois.....	10.96	232,391.00
01	County road to Iroquois easterly to 1.7 mi. west of Hwy. 31.....	5.59	17,245.00
01	From 1.7 mi. west of Hwy. 31 easterly 5.7 mi.....	1.70	25,959.00
01	From 4.0 mi. east of Hwy. 31 easterly 4.70 mi.....	2.00	4,196.00
01	Service centre E-11.....	—	7,693.03
08	From 2.0 mi. west of Calabogie westerly 3.2 mi.....	3.20	26,798.29
way	Main Street easterly 0.49 mi.....	0.29	51,061.00
	Macdonald-Cartier bridge stage 2 Ontario approaches .....	—	18,630.00
	TOTALS.....	74.35	611,109.85

# TWO NEW SERVICE CENTRES FOR MACDONALD - CARTIER FREEWAY in Eastern Ontario





# Crushed Gravel and Stone on Roads by Department's Forces

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	Quebec border to Cardinal.....	65	1,060.00
7	Ottawa west limits to Jct. Hwys. 38 and 7.....	79	4,462.00
15	Old Stittsville to Ashton.....	13	99.00
16	Ottawa to Becketts Landing.....	33	1,398.00
17	Ottawa to Petawawa Buchanan township line.....	187	5,647.00
29	Arnprior to Carleton Place.....	27	625.00
31	Ottawa to Morrisburg.....	48	2,105.00
34	Hawkesbury to Lancaster.....	37	609.00
43	Alexandria to Hallville.....	58	291.00
44	Pembroke to Eganville.....	23	561.00
44	Carp to Almonte.....	10	75.00
50	Killaloe station to Jct. Hwys. 17 and 60.....	40	111.00
52	Alice to Pembroke.....	21	54.00
51	Quebec border to Cardinal.....	61	1,089.00
58	Burnstown to Black Donald.....	24	486.00
11	Brightside to Calabogie.....	20	189.00
TOTALS		746	18,861.00



Ottawa approaches to the Macdonald-Cartier interprovincial bridge. photo 7362 — (Ottawa)

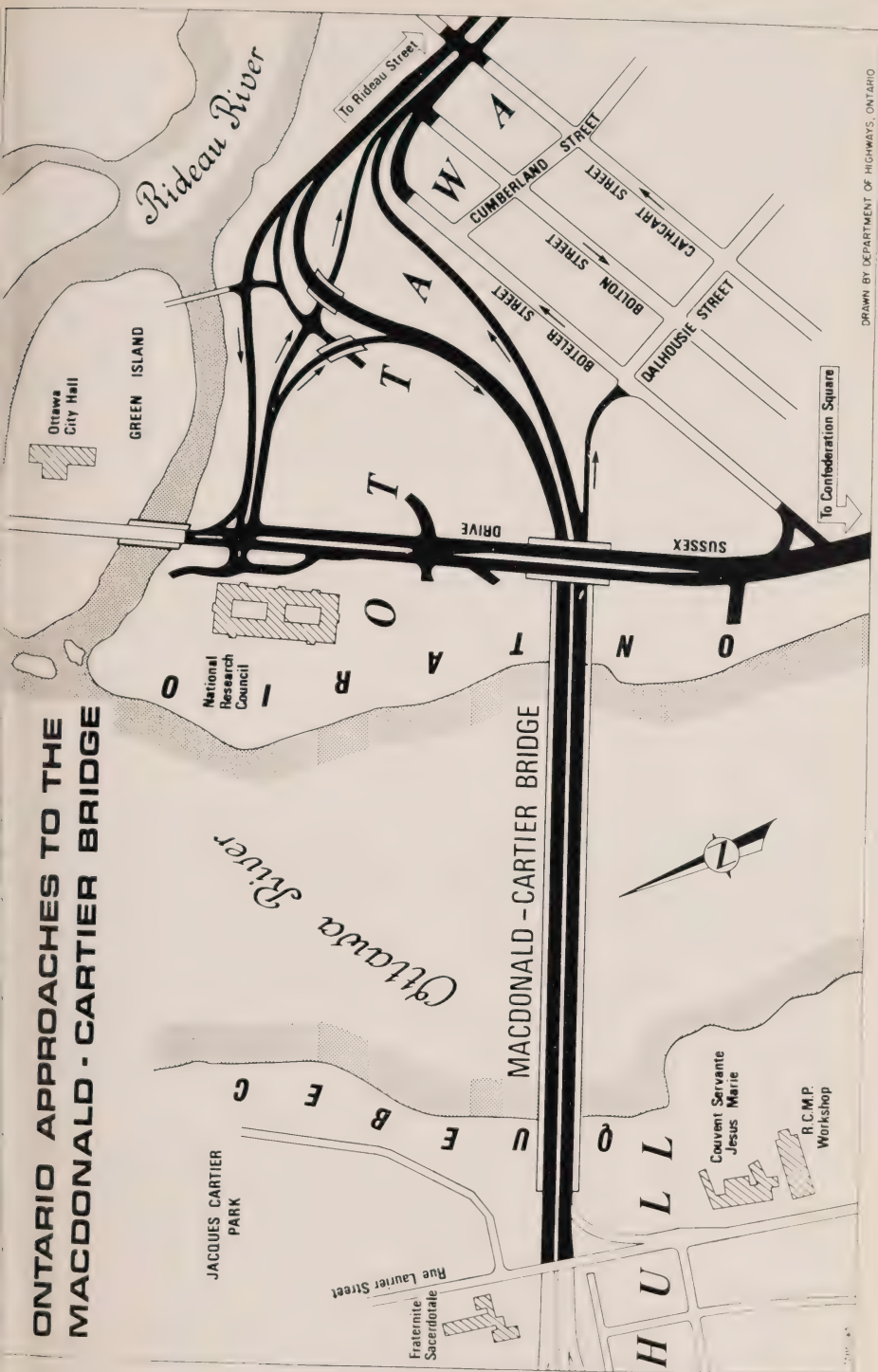


## Grading and Culverts

HWY.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	MILES COMPL.
				PREV. YRS.	THIS YR.
7B	Hwy. 7 north easterly through Carleton Place..	1.80	1965	—	1.00
7, 15	1.5 mi. west of Ottawa city limits westerly 2.22 mi.....	2.22	1965	—	0.25
16	Carsonby Creek.....	0.44	1965	—	0.44
17	Antrim to Jct. of Hwy. 29.....	6.40	1965	—	1.00
31	From Vernon to County Road 5.....	7.24	1965	—	7.24
43	From Port Elmsley to Perth.....	6.17	1965	—	6.17
401	From Iroquois easterly to 1.7 mi. west of Hwy. 31.....	5.59	1965	—	5.59
401	From 1.7 mi. west of Hwy. 31 easterly 5.7 mi....	5.70	1965	—	1.70
401	From 4.0 mi. east of Hwy. 31 easterly 4.7 mi.....	4.70	1965	—	2.00
508	From 2.0 mi. west of Calabogie west 3.2 mi.....	3.20	1965	—	3.20
508	From 1.3 mi. west of Calabogie west 0.69 mi....	0.69	1965	—	0.50
Q'way	Main Street easterly 0.49 mi.....	0.49	1964	0.29	0.10
TOTALS.....		44.64		0.29	29.19

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	THIS FISCAL YEAR	
				PREV. YEARS	MILES COMPL.	TONS PLACED
2	Wood Creek.....	—	1965	—	—	3,813.0
7B	Hwy. 7 north easterly through Carleton Place.....	1.80	1965	—	.80	18,722.0
7, 15	1.5 mi. west of Ottawa city limits westerly 2.22 mi.....	3.22	1965	—	0.25	17,331.0
16	Carsonby Creek.....	0.44	1965	—	0.44	6,770.0
17	Antrim to Jct. of Hwy. 29.....	6.40	1965	—	1.00	23,980.0
31	From Vernon to County Road 5.....	7.24	1965	—	7.24	36,978.0
43	From Port Elmsley to Perth.....	6.49	1965	—	6.49	25,951.0
401	Hwy. 16 easterly to county road to Iroquois	10.96	1964	5.00	5.96	83,611.0
401	County road to Iroquois easterly to 1.7 mi. west of Hwy. 31.....	5.59	1965	—	5.59	17,247.0
401	From 1.7 mi. west of Hwy. 31 easterly 5.7 mi.....	5.70	1965	—	1.70	25,959.0
401	From 4.0 mi. east of Hwy. 31 easterly 4.70 mi.....	4.70	1965	—	3.00	4,196.0
401	Service centre E-11.....	—	—	—	—	7,693.0
Q'way	Elgin to Main Street.....	0.25	1963	0.10	0.15	127.0
Q'way	Main Street easterly 0.49 mi.....	0.49	1965	—	0.29	51,061.0
Q'way	Alta Vista interchange.....	—	1965	—	—	1,638.0
Macdonald-Cartier bridge stage 2 Ontario approaches.....		—	1965	—	—	18,630.0
508	From 2.0 mi. west of Calabogie westerly 3.2 mi.....	3.20	1965	—	3.20	26,798.0
TOTALS.....		56.48		5.10	36.11	370,506.0



DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO

# ONTARIO APPROACHES TO THE MACDONALD - CARTIER BRIDGE

## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
	7 T.C. 6 mi. west of Perth Bathurst patrol.....	Frame	Salt shed	1965	1965
	7 T.C. 6 mi. west of Perth Bathurst patrol.....	Frame	Salt shed	1965	1965
31	1 mi. north of Hwy. 401 Morrisburg.....	Frame	Salt shed	1965	1965
41	2 mi. north of Eganville Jct. Hwy. 60 and 41 Eganville.....	Frame	Salt shed	1965	1965
41	2 mi. north of Eganville Jct. Hwy. 60 and 41 Eganville.....	Frame	Salt shed	1965	1965
44	1/2 mi. west Jct. Hwy. 17 and 44 Carp patrol	Frame	Salt shed	1965	1965
44	1/2 mi. west Jct. Hwy. 17 and 44 Carp patrol	Frame	Salt shed	1965	1965
401	1/4 mi. north Hwy. 401 at Long Sault inter- change.....	6 Bay Metal Patrol Garage	Equipment Storage and Office	1965	1966
511	14 mi. south of Jct. Hwy. 508 and 511 Cala- bogie at Brightside.....	Frame	Patrol Headquarters Office	1965	1965
TOTAL		9			

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted (Handrails only).....	3	—	—
Development roads built.....	12	—	32.4
Off-road parks maintained.....	—	—	—
Roads snowploughed and kept open, King's highways.....	—	—	785
Roads snowploughed and kept open, secondary highways.....	—	—	43
Roadside picnic places maintained.....	45	—	—
Routine maintenance, King's highways.....	—	—	785
Routine maintenance, secondary highways.....	—	—	43
Salt for de-icing roads (raw).....	—	20,716	—
Salt in sand, stockpiled.....	—	1,700	—
Sand for winter maintenance.....	—	41,970	—
Scale houses maintained.....	3	—	—
Seeding by department's forces..... (acres)	164	—	—
Shrubs received and planted this year.....	1,646	—	—
Signs erected or replaced.....	5,097	—	—
Snow fence erected, dismantled, stored.....	—	—	5
Weed control.....	—	—	904
Zone painting on King's highways..... (gals.)	10,479	—	—

**DISTRICT No. 10 — BANCROFT**

J. E. Callaghan, P.Eng., District Engineer

**CONSTRUCTION**

Highway 41—contract 64-07, Griffith southerly. A grading contract. 5.59 miles was completed in the spring of 1965.

Contract 65-140, Griffith northerly. A grading contract. Was commenced in the spring of 1965 and was completed to within  $\frac{1}{4}$  mile of end of contract. Trimming operation still to be carried out.

Contract 65-175, Griffith southerly. 5.6 miles was paved with hot mix H.L. 4 binder course.

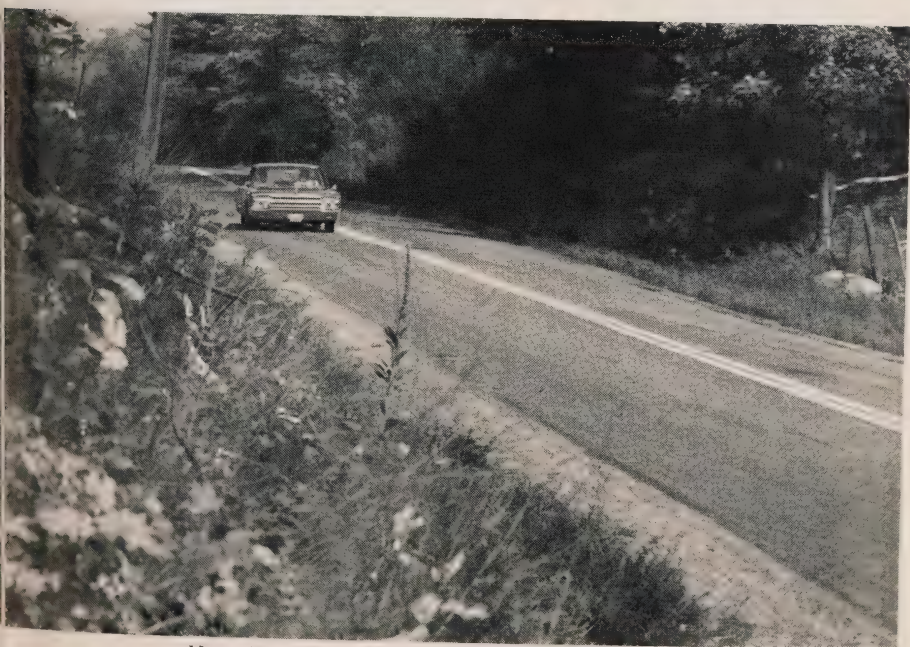
Highway 62—contract 64-138, 0.3 miles north of St. Ola Road to secondary Highway 620. A grading contract. 4.5 miles was completed.

Highway 60—contract 64-228, Algonquin Park, 8.91 miles easterly. A grading contract. Was completed.

Contract 65-157, junction Highway 60 and Highway 127 westerly 9.86 miles was completed with exception of clean up of rock, cuts, placing granular "A" and other small items.

Highway 28 and Secondary Highway 620—contract 64-249, Eels Creek Bridge at Osley was completed and 0.37 miles of approaches and junction of Highway was graded and paved with H.L. 4 binder course.

Secondary Highway 500—contract 64-218, Hermon westerly 2.21 miles. Grading contract was completed.



Hwy. 41 — West of Dacre. photo 7353 — (Bancroft)



Highway 36—contract 65-267, Nogies Creek to Flynn's Corner 7.08 miles of hot mix paving was laid.

During the summer and winter day labour construction was carried out on secondary Highways 506, 620, and 512.

During the year, construction was completed on two new salt sheds at Buckhorn patrol yard, also one new salt shed each at Tory Hill patrol yard and at Dacre patrol yard.

Approximately 64 miles of highway or secondary highway were surface treated with limestone chips or sand cover. Bituminous prime dust layer was applied to approximately 80 miles of highway or secondary highway.

Zone painting was completed over approximately 444 miles.

214 acres of right-of-way were seeded by department forces.

Approximately 525 miles of right-of-way were sprayed with weed and brush chemicals.

#### Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
36	From Nogies Creek to secondary Hwy. 507.....	7.08	1965	7.08	14,669
41	From Griffith southerly.....	5.60	1965	5.60	12,432
62, 500	Village of Bancroft.....	0.82	1965	0.82	3,450
504	Village of Apsley.....	0.37	1965	0.37	1,779
TOTALS.....		13.87		13.87	32,330

#### Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	MILES IN JOB	THIS FISCAL YEAR	
			MILES COMPL.	TONS PLACED
506	Plevna westerly.....	1.5	1.5	2,475
620	East of Coe Hill.....	0.6	0.6	990
620	Vicinity of Bott's Lake.....	1.0	1.0	1,650
620	Vicinity of Chandos Lake.....	1.0	1.0	1,650
TOTALS.....		4.1	4.1	6,765

#### Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
36	Vicinity of Nogies Creek.....	1.3	3,396	151
62	From Hwy. 60 northerly.....	4.1	16,122	252
500	Hermon westerly.....	2.2	6,363	218
500	McArthur's Mills to Denbigh.....	21.5	66,648	1,913
500	Bancroft easterly.....	5.0	—	—
507	From Hwy. 36 northerly.....	15.0	30,775	1,589
507	From Hwy. 503 southerly.....	5.5	—	—
513	From Hwy. 132 to 1.05 mi. east of Caldwell.....	10.0	18,236	975
515	From Hwy. 62 southerly.....	1.7	4,927	195
519	From Lochlin southerly.....	7.0	14,685	736
523	From 6 mi. to 13 mi. south of Madawaska.....	7.0	11,721	602
TOTALS.....		80.3	172,873	6,631

## Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
503	Irondale to Kinmount.....	3.0	4,500

## Bituminous Surface Treatment

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS CHIPS USED
36	From Hwy. 28 westerly.....	8.5	20,858	1,210
62	From Hwy. 60 northerly.....	4.1	15,000	712
00	Hermon westerly.....	2.2	14,360	725
00	McArthur's Mills to Denbigh.....	21.5	66,674	2,804
06	From 3 mi. east of Hwy. 41 easterly.....	17.0	41,528	1,802
15	From Hwy. 62 southerly.....	1.7	13,088	400
17	From 1.0 mi. south of Hwy. 62 southerly.....	9.0	20,452	1,160
TOTALS.....		64.0	191,960	8,813

## Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
12	Village of Bancroft.....	1965	1965	1965	Concrete
14	Village of Apsley.....	1965	1965	1965	Concrete



Hwy. 41 — North of Griffith. photo 7338 — (Bancroft)

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
28	Apsley patrol yard (stockpiled).....	—	4,005
36	Nogies Creek to secondary Hwy. 507.....	7.08	11,382
41	Griffith southerly.....	5.60	8,045
41	Griffith northerly.....	4.71	29,042
41, 132	Dacre patrol yard (stockpiled).....	—	8,000
60	Madawaska patrol yard (stockpiled).....	—	9,993
60	Barry's Bay patrol yard (stockpiled).....	—	10,198
60	Algonquin Park station road easterly.....	7.92	79,699
60	From Hwy. 127 westerly.....	7.14	46,006
60	Whitney patrol yard (stockpiled).....	—	8,500
62	5 mi. west of Pembroke westerly.....	—	1,368
62	Jct. secondary Hwy. 620 southerly.....	3.49	33,648
62	Ormsby patrol yard (stockpiled).....	—	1,407
62, 500	Village of Bancroft.....	0.82	8,979
Old 127	3.3 mi. to 9.8 mi. north of Lake St. Peter.....	6.50	10,047
500	Hermon westerly.....	0.69	5,107
500	12 mi. east of Bancroft (stockpiled).....	—	2,051
503	7 mi. east of Kinmount (stockpiled).....	—	12,018
504	Various locations (stockpiled).....	—	37,997
504	At Apsley.....	0.37	5,090
506	Plevna westerly.....	0.63	4,570
506	1.3 mi. west of Plevna (stockpiled).....	—	13,471
512	1.5 mi. to 2.2 mi. north of Brudenell.....	0.57	3,853
512	At Brudenell (stockpiled).....	—	8,138
515	Quadville to Jct. Hwy. 512.....	9.90	16,498
515	5 mi. south of Jct. Hwy. 512 (stockpiled).....	—	3,491
519	9 mi. north-east of Kinmount (stockpiled).....	—	7,900
620	4.2 mi. east of north Jct. Hwy. 28 (stockpiled).....	—	5,200
620	0.1 mi. east of Clydesdale Road (stockpiled).....	—	4,246
620	0.2 mi. west of Coe Hill bridge (stockpiled).....	—	6,082
620	1.17 mi. west of Jct. Hwy. 62 (stockpiled).....	—	3,715
TOTALS.....		55.42	409,746

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
506	From 2.0 mi. to 2.4 mi. west of Plevna.....	0.40	2,058
620	Vicinity of Botts Lake.....	0.50	4,035
620	From 1.2 to 1.6 mi. west of Jct. Hwy. 62.....	0.40	1,545
620	From 0.7 mi. to 1.2 mi. east of Coe Hill.....	0.50	840
620	Vicinity of Chandos Lake.....	1.00	2,460
TOTALS.....		2.80	10,938

## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	MILES COMPL.
				PREV. YRS.	THIS YEAR
41	Griffith northerly.....	6.16	1965	—	5.98
60	Algonquin Park station road easterly.....	8.91	1964	3.12	5.79
60	Hwy. 127 westerly.....	9.86	1965	—	6.88
62	Jct. of Hwy. 620 southerly.....	4.50	1964	0.68	3.82
2, 500	Village of Bancroft.....	0.82	1965	—	0.82
Old 127	Hastings boundary northerly.....	6.50	1965	—	6.50
00	Hermon westerly.....	1.90	1964	1.00	0.90
04	At Apsley.....	0.37	1965	—	0.37
06	1.0 mi. to 1.5 mi. west of Plevna.....	0.50	1965	—	0.50
06	2.0 mi. to 2.4 mi. west of Plevna.....	0.40	1966	—	0.40
12	1.5 mi. north of Brudenell.....	1.50	1964	0.50	1.00
13	2 mi. south of Hynford.....	0.20	1965	—	0.20
20	1.2 mi. to 1.6 mi. west of Jct. Hwy. 62.....	0.40	1965	—	0.40
20	0.7 mi. to 1.2 mi. east of Coe Hill.....	0.50	1964	0.25	0.25
20	0.1 mi. to 0.7 mi. east of Coe Hill.....	0.60	1966	—	—
20	Clydesdale Road westerly.....	0.70	1966	—	—
TOTALS.....		43.82		5.55	33.81

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	THIS FISCAL YEAR	
				PREV. YRS.	MILES COMPL.	TONS PLACED
5	Nogies Creek to secondary Hwy 507.....	7.08	1965	—	7.08	11,382
1	Griffith southerly.....	5.60	1965	—	5.60	9,157
1	Griffith northerly.....	6.16	1965	—	5.24	168,675
0	Algonquin Park station road easterly.....	8.91	1964	3.12	5.79	234,050
0	Hwy. 127 westerly.....	9.86	1965	—	6.27	208,123
2	Jct. Hwy. 620 southerly.....	4.50	1964	0.68	3.82	102,961
2	5 mi. west of Pembroke westerly.....	4.92	1964	4.92	—	3,740
500	Village of Bancroft.....	0.82	1965	—	0.82	28,834
0	Hermon westerly.....	1.90	1964	1.00	0.90	25,131
1	At Apsley.....	0.37	1965	—	0.37	10,622
1	Plevna westerly.....	0.63	1965	—	0.63	4,570
2	1.5 mi. to 2.2 mi. north of Brudenell.....	0.57	1965	—	0.57	3,853
0	1.2 mi. to 1.6 mi. west of Jct. Hwy. 62.....	0.40	1965	—	0.40	2,060
0	Vicinity of Botts Lake.....	0.50	1964	0.50	—	1,450
TOTALS.....		52.22		10.22	37.49	814,608

## Granular Base Where No Grading Done

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
0	Apsely to Glen Alda (various locations).....	16.5	1965	16.5	24,300



New Buildings					
Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
36	Buckhorn patrol yard.....	120A standard salt shed	Salt storage	1965	1966
		120A standard salt shed	Equipment storage	1965	1966
		Patrol office	Patrolman's office and personnel use	1965	1965
		Tool shed, frame construction 12' x 18'	Patrol tools	1965	1965
41	Denbigh patrol yard.....	Tower building	Radio equipment	1965	1965
41	Dacre patrol yard.....	Patrol office	Patrolman's office and personnel use	1965	1966
		120A standard salt shed	Equipment storage	1965	1966
		Tool shed, frame construction 12' x 24'	Patrol Tools	1965	1965
62	Jack's Lake patrol yard.....	Tool shed, frame construction 12' x 24'	Patrol tools	1965	1965
62	Combermere patrol yard.....	Tool shed, frame construction 12' x 18'	Patrol tools	1965	1965
60	Madawaska patrol yard.....	Tool shed, frame construction 12' x 18'	Patrol tools	1965	1965
121	Tory Hill patrol yard.....	120A standard salt shed	Equipment storage	1965	1965
		Patrol office	Patrolman's office and personnel use	1965	1965

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Calcium dust layer on gravel roads.....	—	56.8	—
Development roads built.....	—	—	21.60
Off-road parks maintained.....	25	—	—
Roads snowploughed and kept open King's highways.....	—	—	371.3
Roads snowploughed and kept open, secondary highways.....	—	—	295.7
Roadside picnic places maintained.....	7	—	—
Routine maintenance, King's highways.....	—	—	371.3
Routine maintenance, secondary highways.....	—	—	295.7
Salt for de-icing roads (raw).....	—	5,666	—
Salt in sand, stockpiled.....	—	2,483	—
Sand for winter maintenance.....	—	54,850	—
Scale houses maintained.....	2	—	—
Seeding by department's forces..... (acres)	214	—	—
Shrubs received and planted this year.....	1,100	—	—
Signs erected or replaced.....	2,433	—	—
Snow fence erected, dismantled, stored.....	—	—	20
Weed control.....	—	—	525
Zone painting on King's highways..... (gals.)	6,678	—	—
Zone painting on secondary highways..... (gals.)	3,278	—	—

**DISTRICT No. 11 — HUNTSVILLE**

**E. H. Jones, P.Eng., District Engineer**

**CONSTRUCTION**

Due to the revision of district boundaries the mileages of King's highways and secondary highway was reduced by approximately two hundred miles. However, the construction program was not affected to any extent and an extensive program of reconstruction was again carried out.

On Highway 11, the work of widening to four lanes was completed to the limits of the village of Severn Bridge and at present the construction of a new structure over the Severn River is well under way. During the coming construction season, work will be continued northerly for 4.5 miles and it is expected that this reconstruction and widening will carry over into the next fiscal year.

On Highway 35 from Dorset southerly for 7.24 miles a major contract for reconstruction was awarded and this work continued through the winter months. The new alignment follows closely to the existing and was designed to retain the scenic beauty of the route.

On Highway 69 in the town of Bala, a by-pass was completed and paved, which included a subway under the Canadian Pacific Railway and a new structure over the Moon River. This project has greatly increased the flow of traffic through the area, and with the new parking lot also provided, has improved conditions in the town.

On Highway 69 from Gordon Bay to Hayes Corners, 6.6 miles was reconstructed and paved with hot mix to bring this section to Trans-Canada standards. Intersection improvements were also made to the south and north entrances to Parry Sound and to the junction of secondary Highway 518.

On Highway 103 from the junction of Highway 69 southerly, a contract was awarded for hot mix resurfacing and padding. This work is as yet not completed and will carry over into the next construction season.

As in previous years, program of construction by day labour forces was continued. These projects, usually up to one mile in length were continued through the winter months, and with labour and equipment hired in the locality of the work, helped to relieve unemployment. Equipment was hired by tender at hourly rates. Improvements were carried out on the following highways, 35, 121, 124, 518, 520, 530 and 532.

**MAINTENANCE**

During the summer, 19.0 miles of mulch pavement were laid in the district.

District forces screened 50,000 cubic yards of sand for winter maintenance using the department screening plant. Miles zone painted in the district totalled 558.5.

A total of 74.5 miles of highways and secondary highways were primed by contract. 7 miles of bituminous surface treatment was carried out in the district. This work was also done by contract.

The bridge maintenance crew repaired several bridges and painted 9 structures in the district.

A new patrol yard was developed at Gravenhurst.

During the winter a type of snow plow blade capped with carboloy steel was used for the first time in this district. The long life of these blades enabled plows to continue plowing throughout any storm without changing blades. This resulted in much more efficient snowplowing operations.

### Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
11	Sparrow Lake Road to 0.5 mi. south of Severn River bridge.....	3.54	1965	3.54	37,513
11	South entrance to Huntsville and Golf Club Road intersection on Huntsville by-pass.....	0.76	1965	0.76	3,084
11	Various locations from 1.5 mi. north of Orillia to Sparrow Lake Road.....	—	1965	—	675
35, 60	From Jct. of Hwys. 11B and 35 and 60 to Jct. of Hwys. 35 and 60 and 35.....	—	1965	—	476
69	Moon River Bala north channel southerly 0.25 mi. including 0.25 mi. connecting road to Hwy. 103 and C.P.R. subway at Bala.....	0.50	1965	0.50	1,510
69	Part "A" Gordon Bay to Hayes Corners.....	6.64	1965	6.64	25,039
TCH	Part "B" intersection improvement at Hwy. 518.....	—	1965	—	1,676
	Part "C" south entrance to Parry Sound.....	—	1965	—	1,137
	Part "D" north entrance to Parry Sound.....	—	1965	—	1,121
69	Town of Gravenhurst connecting link.....	.76	1965	.76	1,608
103	From Jct. of Hwy. 69 southerly to Jct. of Hwy. 12..	—	1965	—	8,448
TCH					
520	North Creek bridge 2.5 mi. west of Hwy. 11 at Burks Falls.....	0.70	1965	0.70	1,097
	TOTALS.....	12.90		12.90	83,384

### Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	MILES IN JOB	THIS FISCAL YEAR	
			MILES COMPL.	TONS PLACED
35	Carnarvon to Halls Lake (sections).....	—	3.0	4,500
118	Dorset to Baysville (sections).....	—	3.0	4,500
121	Haliburton to 1 mi. east.....	—	1.0	1,650
124	McKellar-Ferguson township boundary 1.7 mi. west.....	1.7	1.7	2,700
518	Kearney to Sprucedale (sections).....	1.5	.5	750
518	Kearney to Sand Lake (sections).....	—	5.0	7,500
518	7.8 mi. to 8.8 mi. east of Hwy. 69.....	1.0	1.0	1,650
527	Baysville to Huntsville (sections).....	—	1.0	1,500
530	6.0 mi. east of Jct. of Hwy. 35 to 7.0 mi. ....	—	1.0	1,650
532	Cardwell-Humphry township boundary 8 mi. east.....	0.8	.8	1,320
532	7.8 mi. to 8.8 mi. north of Jct. of Hwys. 118 and 532.....	1.0	1.0	1,650
592	Emsdale to north Jct. of Hwy. 11.....	—	.5	750
	TOTALS.....	6.0	19.5	30,120

## Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
124	From 5.0 mi. east of McKellar to 4 mi. west of Magne- tawan.....	8.7	23,900	655
514	Jct. of Hwy. 35 to Interlaken.....	10.0	27,500	750
518	From Orrville to 7.0 mi. west.....	7.0	19,250	525
518	Sprucedale to Bear Lake.....	7.0	19,250	525
518	Kearney to Sand Lake.....	10.0	27,500	750
519	Haliburton to 9.3 mi. east.....	9.3	25,575	700
520	Dunchurch to Ardbeg.....	16.5	45,400	1,250
530	Jct. of Hwy. 519 to 6.0 mi. west of Jct. 519 and 530.....	6.0	16,500	450
TOTALS.....		74.5	204,875	5,605

## Bituminous Surface Treatment

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS CHIPS USED
118	2.4 mi. to 3.7 mi. east of north Jct. of Hwys. 118 and 11..	1.3	3,640	185
520	Burks Falls to 0.4 mi. east.....	0.4	1,120	44
520	Lake Cebebe to 1.6 mi. east.....	1.6	4,500	230
532	5.0 mi. east of Hwy. 69 to 6.0 mi. east of Hwy. 69.....	1.0	2,800	145
532	4.0 mi. east of Rosseau to 8.0 mi. east of Rosseau.....	4.0	11,200	580
532	4 mi. west of Jct. of Hwys. 516 and 532.....	0.4	1,120	44
TOTALS.....		8.7	24,380	1,228



Hwy. 35 — South of Dorset. photo 7702 — (Huntsville)



## Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
11	Township of Rama at Washago, Severn River bridge—west branch of Severn River.....	1964	1965	1965	Reinforced concrete —widening of structure
11	Township of Rama at Washago, Trent Valley canal bridge—Trent Valley canal.....	1964	1965	1965	Reinforced concrete —widening of structure
11	Township of Orillia near Washago, C.N.R. overhead.....	1964	1965	1965	Reinforced concrete —widening of structure
69	Township of Wood at Bala, Moon River bridge—Moon River.....	1964	1965	1965	Reinforced concrete
69	Township of Wood at Bala—C.P.R. subway.....	1964	1965	1965	Reinforced concrete
520	Township of Ryerson 2.5 mi. west of Hwy. 11 at Burks Falls North Creek bridge—North Creek.....	1964	1965	1965	Reinforced concrete

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11	Sparrow Lake Road to 0.5 mi. south of Severn bridge.....	3.54	59,296
11	Huntsville by-pass south entrance and golf course turn.....	.76	23,538
35	2.2 mi. north of Jct. Hwys. 530 and 35 and Minden patrol yard.....	—	9,995
35	From 0.7 mi. south of Hwy. 11B (Dorset) southerly.....	7.24	39,541
69	Town of Bala from Moon River .25 mi. including .25 mi. connecting road to Hwy. 103 and C.P.R. subway—.25 mi. reserve road.....	.75	3,800
69TCH	Gordon Bay to Hayes Corners—parts A, B, C and D.....	6.64	49,738
69	Town of Gravenhurst (connecting link).....	.76	2,084
118	4.9 mi. west of Hwy. 527 in Baysville westerly 1.72 mi. including construction of culvert at Stoneleigh Creek.....	1.72	10,284
121	1.5 mi. east of village of Haliburton.....	1.00	8,989
124	7.5 mi. west of Jct. of Hwys. 11 and 124 at Sundridge.....	.50	6,997
518	3 mi. east of Kearney.....	—	7,496
518	Various locations from Sprucedale to Orrville.....	—	14,602
520	2.0, 9.2 and 13.5 mi. west of Dunchurch.....	—	9,500
520	North Creek Bridge, 2.5 mi. west of Hwy. 11, Burks Falls.....	0.70	7,476
532	From 7.8 mi. north of Jct. Hwys. 118 and 532 to 8.8 mi. north.....	—	7,992
TOTALS.....		23.61	261,328

## Crushed Gravel and Stone on Roads by Department's Forces

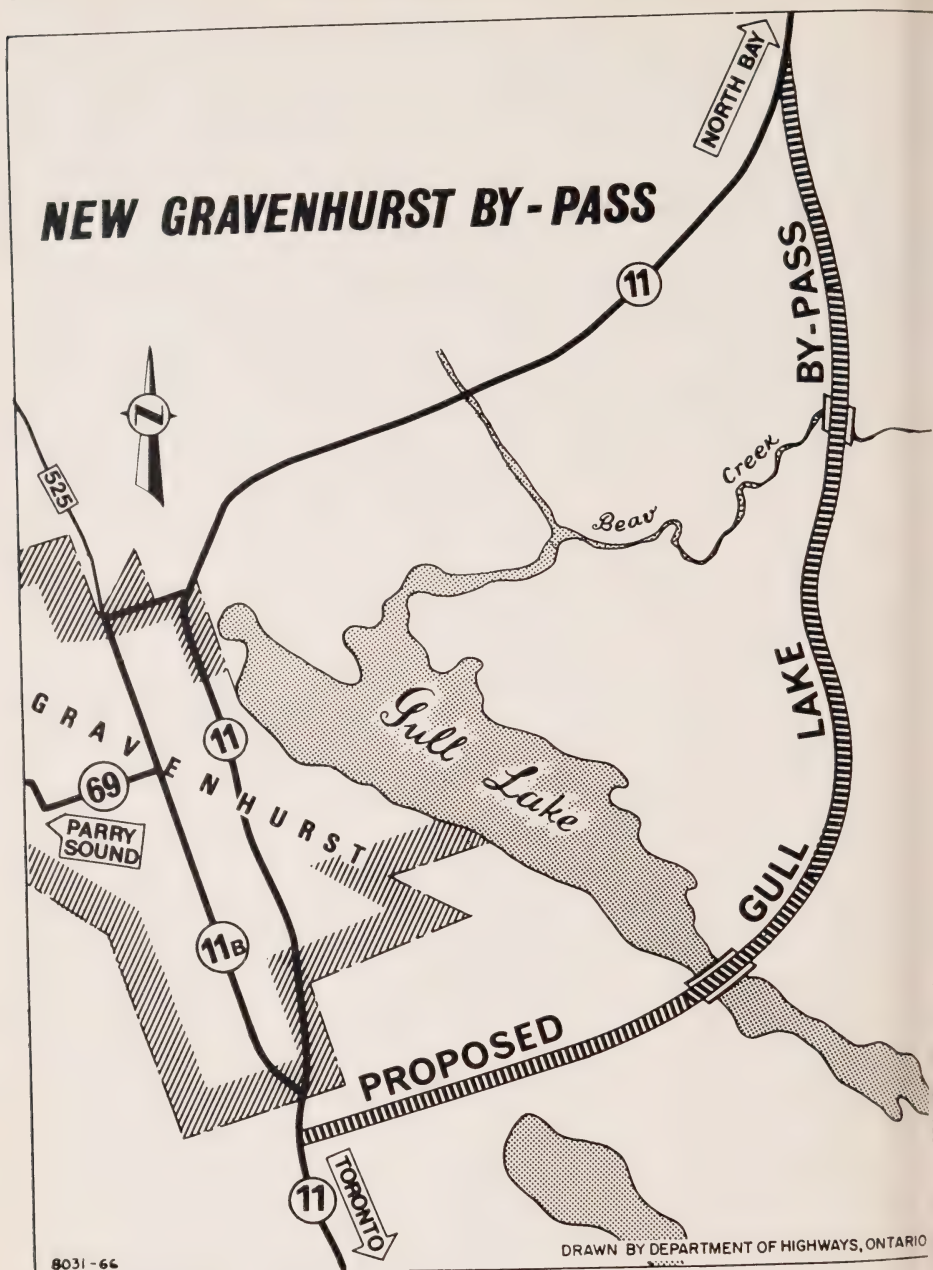
Hwy. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11	Severn bridge to 4.0 miles north of Burks Falls.....	68.1	584
35	Jct. Hwy. 11B (Huntsville) to Haliburton Victoria boundary.....	75.0	2,542
60	Jct. Hwy. 35 and 60 (Dwight) to Algonquin Park headquarters.....	28.4	13,554
69TCH	Jct. Hwy. 11 (Gravenhurst) to Shawanaga and Harrison township boundary.....	75.4	2,484
103	Jct. Hwy. 12 (Waubaushe) to Jct. of Hwy. 69 (Footes Bay).....	31.4	400

CH

18	Jct. Hwy. 69 (Glen Orchard) to Jct. Hwy. 35 (Dorset).....	55.6	4,292
21	Jct. Hwy. 35 to district boundary, concession II, Dudley township.....	30.4	4,308
24	Jct. Hwy. 69 to Chapman and Strong township boundary.....	46.6	26,262
14	Hwy. 35 and 60 to Interlaken.....	10.0	1,180
16	Jct. Hwy. 11 to Windermere.....	15.7	1,126
18	Hwy. 69 to Sand Lake.....	55.8	19,282
19	Restone Lake to Hwy. 121.....	33.6	474
20	Burks Falls to Ardbeg.....	33.7	1,694
25	Gravenhurst to Gravenhurst sanitorium.....	1.7	—
27	Baysville to Huntsville.....	16.7	336
30	Carnarvon to secondary Hwy. 519.....	12.0	3,382
32	Jct. Hwy. 69 to Jct. Hwy. 11.....	43.2	9,960
39	South Jct. Hwy. 69 to north Jct. Hwy. 69.....	13.5	236
22	Novar to Emsdale.....	9.8	1,752
22	Jct. Hwy. 103 to Jct. Hwy. 69.....	7.0	200
32	Jct. Hwy. 118 to Jct. secondary Hwy. 532.....	18.2	140
40	Town of Bala to Hwy. 103.....	11.0	1,800
	TOTALS.....	692.8	95,988

## Grading and Culverts

WY. NO.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	MILES COMPL. THIS YR.
1	Sparrow Lake Road to 0.5 mi. south of Severn River.....	3.54	1964	1.70	1.84
1	Huntsville by-pass, south entrance and golf club turn.....	.76	1965	—	.76
5	From 0.7 mi. south of Hwy. 118 (at Dorset) southerly 7.24 mi.....	7.24	1965	—	2.00
5	From lot 1, concession "B" McClintock township through lots 35 and 34, concession "A", Sherborne township.....	0.75	1965	—	.75
9	Town of Bala, from Moon River at Bala for 0.25 mi. including 0.25 mi. of connecting road to Hwy. 103 and 0.25 mi. of reserve road.....	0.75	1964	.50	.25
9TC	Gordon Bay to Hayes Corners, Parts "A", "B", "C" and "D".....	6.64	1965	—	6.64
9	Town of Gravenhurst (connecting link).....	0.76	1965	—	0.76
8	4.9 mi. west of Hwy. 527 in Baysville westerly 1.72 mi.....	1.72	1965	—	0.52
1	1.0 mi. to 2.0 mi. east of Haliburton.....	1.00	1965	—	0.75
4	7.4 mi. west of Hwy. 11 to 7.9 mi. west.....	.50	1964	0.25	0.25
4	1.1 mi. east of west Jct. of Hwys. 124 and 520 to 2.3 mi. east.....	1.20	1965	—	1.20
4	McKellar-Ferguson township boundary 1.0 mi. easterly.....	1.00	1965	—	1.00
8	5.0 mi. to 10.0 mi. east of Kearney.....	5.00	1965	—	5.00
8	Jct. of Hwys. 69 and 518 to 0.6 mi. east.....	0.60	1965	—	0.60
0	5.5 mi. east of Jct. of Hwys. 35 and 530.....	0.50	1964	0.25	0.25
0	0.5 mi. east of West Guilford to 1.0 mi. east.....	0.50	1965	—	0.50
2	7.8 mi. to 8.8 mi. north of Jct. of Hwys. 118 and 532.....	1.00	1964	—	1.00
1	9.0 mi. to 10.0 mi. north of Jct. of Hwys. 118 and 532.....	1.00	1965	—	0.75
	TOTALS.....	34.46		2.70	24.82



## Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES		
				COMPL. PREV. YEARS	THIS MILES COMPL.	FISCAL YEAR TONS PLACED
11	Sparrow Lake Road to 0.5 mi. south of Seyvern River bridge.....	3.54	1964	—	3.54	157,883
11	Huntsville by-pass, south entrance and golf course turn.....	.76	1965	—	.76	23,559
35	From 0.7 mi. south of Hwy. 11B (Dorset) southerly.....	7.24	1965	—	—	47,839
35	2.2 mi. north of Jct. Hwy. 530 and 35 and Minden patrol (various).....	—	1965	—	—	9,995
59	Town of Bala from Moon River .25 mi. in- cluding .25 mi. connecting road to Hwy. 103 and C.P.R. subway—.25 mi. reserve road.....	.75	1964	—	.75	16,734
59TC	Gordon Bay to Hayes Corners—Part A, B, C and D.....	6.64	1965	—	6.64	63,246
59	Town of Gravenhurst (connecting link).....	.76	1965	—	.76	2,084
8	4.9 mi. west of Hwy. 527 in Baysville westerly 1.72 mi. including construction of culvert —Stoneleigh Creek.....	1.72	1965	—	—	10,284
21	1.5 mi. east of village of Haliburton.....	1.0	1965	—	—	19,106
24	7.4 mi. west of Hwy. 11—Sundridge.....	.50	1964	.25	.25	2,487
24	McKellar-Ferguson township line, 1.7 mi. westerly.....	1.70	1964	1.00	.70	17,595
24	McKellar-Ferguson township line, 1.0 mi. easterly.....	1.00	1965	—	—	26,610
8	5.0 mi. to 10.0 mi. east of Kearney.....	5.00	1965	—	5.0	1,355
8	From 7.8 to 8.3 mi. east of Jct. Hwys. 69 and 518 Orrville.....	.50	1964	—	.50	4,741
8	From Jct. of Hwys. 69 and 518 to 0.6 mi. east North Creek bridge 2.5 mi. west of Hwy. 11, Burks Falls.....	.60	1965	—	—	7,314
0	5.5 mi. east of Jct. of Hwys. 35 and 530, West Guilford.....	.70	1964	—	.70	34,410
0	0.5 mi. east of West Guilford to 1.0 mi. east..	.50	1964	—	.50	459
2	0.9 mi. to 1.65 mi. east of Hwy. 632, Glen Rocks.....	.50	1965	—	.50	7,745
2	7.8 mi. to 8.8 mi. north of Jct. of Hwys. 118 and 532.....	.75	1964	—	.75	19,598
2	9 mi. to 10 mi. north of Jct. of Hwys. 118 and 532.....	1.00	1964	—	1.00	20,145
		1.00	1965	—	—	25,874
	TOTALS.....	36.16		1.25	17.85	519,063

## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR	
				BEGUN	COMPLETED
8	Dorset patrol yard.....	Frame	Temporary office	1965	March, 1966
2	Bracebridge patrol yard.....	Frame	Temporary office	1965	March, 1966
9	Parry Sound patrol yard.....	Frame	Temporary office	1965	March, 1966
1	Gravenhurst patrol yard.....	Frame	Miscellaneous storage	1965	March, 1966



## Total of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	9	—	—
Calcium dust layer on gravel roads.....	—	190	60
Development roads built.....	—	—	18.5
Off-road parks maintained.....	25	—	—
Roads snowploughed and kept open, King's highways.....	10	—	395
Roads snowploughed and kept open, secondary highways.....	14	—	286
Roadside picnic places maintained.....	25	—	—
Routine maintenance, King's highways.....	—	—	395
Routine maintenance, secondary highways.....	—	—	286
Salt for de-icing roads.....(raw)	—	6,700	395
Salt in sand, stockpiled.....	—	2,500	—
Sand for winter maintenance.....	—	70,500	—
Scale houses maintained.....	3	—	—
Shrubs received and planted this year.....	7,368	—	—
Signs erected or replaced.....	2,555	—	—
Snow fence erected, dismantled, stored.....	—	—	28
Snow hedges planted this year.....	—	—	1
Weed control.....	—	—	455.7
Zone painting on King's highways.....(gals.)	—	—	384.1
Zone painting on secondary highways.....(gals.)	—	—	174.4

**DISTRICT No. 13 — NORTH BAY****H. Martens, P.Eng., District Engineer****CONSTRUCTION**

Grading of Highway 17 from Rutherglen to secondary Highway 630 for 6.10 miles was completed by mid summer. A contract was then called for the paving of this section of road, together with the grading and paving of secondary Highway 531 from Highway 17 to the village of Bonfield. The work was finished in the late fall except for the final trimming.

Construction continued on Highway 17 in 1965 with the awarding of two grading, drainage and granular base contracts, one from secondary Highway 630 easterly for 5.43 miles, and the other from Bissett Creek westerly for 5.3 miles. The former included a structure over the Pautois Creek, the construction of which was carried out through the winter months. A small grading and paving project was also started in the town of Mattawa for the reconstruction of a sharp curve on Highway 17.

A structure and grading contract was awarded in the late fall for the reconstruction of the Amable Du Fond River bridge and approaches on Highway 17, 0.70 miles east of secondary Highway 630. This contract, together with the erection of the structural steel is expected to be completed early in 1966.

Highway 11 received intersection treatment at the junction of 534, Powassan, and at O'Brien Street on the North Bay by-pass. The work included grading, drainage, granular base, curb and gutter and sewers.

On Highway 64 a grading, drainage and granular base project was completed except for minor grading and trimming from 0.5 miles south of Lavigne southerly for 5.2 miles. The reconstruction eliminated several bad curves and reduced the district's yearly problems of flooding.

Grading of Highway 64 from Alban easterly for 5.85 miles together with the grading of secondary Highway 607 for 1 mile was completed in 1965 with the exception of trimming and seeding. This section of Highway 64 was paved in the late fall. Included in the same contract was the paving of the reconstructed 1 mile of Highway 607, the reconstruction of Highways 535 and 64 in the village of Noelville, the improvement of the intersection of Highways 64 and 69, and the placing of granular base and paving in the Grundy Provincial Park on Highway 69. The work in Noelville included the widening of the Highways and the placing of sewers, curb and gutters and sidewalks.

The day labour program continued in 1965. Secondary Highway 522 was reconstructed from Commanda easterly for 2.7 miles and 7 miles west of Loring for 5 miles. Also, secondary Highway 522 was extended 1.5 miles westertly to "Ess Narrows".

On Highway 64, 3 miles were rebuilt north of Field; 3 miles on secondary Highway 533 and 3 miles on secondary Highway 630 north of Kiosk. On secondary Highway 535 reconstruction was carried out at 0.5 miles and 2 miles south of St. Charles to improve alignment and grade. On Highway 63 considerable work was carried out to correct a number of serious frost heaves, together with grading improvements.

**MAINTENANCE**

As a result of the boundary changes, mileage in the North Bay district was reduced by approximately 25 miles. However, this loss was compensated for by the assumption of 12½ miles of the West Road, west of Loring, as secondary Road 522.

Spring break-up was more severe than normal with considerable frost damage to the highways.

Extremely wet weather was experienced during July, August and September, severely curtailing summer maintenance operations.

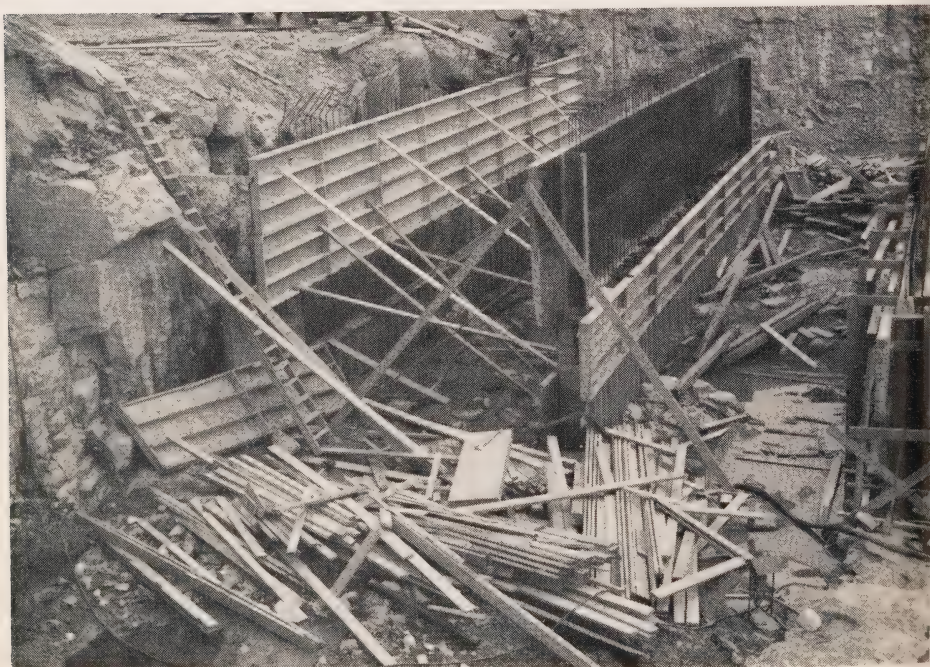
Three miles of hot mix patching was carried out on Highway 11 between North Bay and Marten River.

A mulch surface was laid on 5 miles of gravel road; surface treatment applied to 33 miles of mulch pavement; prime dust layer applied on 92 miles of gravel road and liquid calcium applied on 42 miles of gravel road.

Three new patrol sites were established. D.H.O. forces constructed 3 standard salt sheds, 4 temporary equipment storage sheds, 3 loader sheds and 4 temporary patrol offices.

Construction began in the fall on a 6-bay patrol garage at Farley's Corners.

Considerably more snow and freezing rain than average was experienced in the months of November and December. However, less than average precipitation was experienced during February and March.



Hwy. 64 — West of Ouellette, photo 7236 — (North Bay)



## Automatic Signals at Railway Crossings

HWY. No.	RY. NAME		LOCATION	TYPE OF SIGNAL
	INITIALS			
63	O.N.R.	0.5 mi. northeast of North Bay.....		Additional flasher light installed

## Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
11	Powassan Jct. Hwy. 534 intersection.....	0.26	1965	0.26	2,558
11, 17					
TC	North Bay by-pass O'Brien Street intersection.....	0.25	1965	0.25	1,780
17TC	Mattawa curve revision.....	0.50	1965	0.50	58
17TC	Rutherglen to Hwy. 630.....	6.10	1965	6.10	17,519
64, 69	Rutter, intersection only.....	0.29	1965	0.29	1,273
64	Village of Noelville.....	1.55	1965	1.55	7,060
64, 607	2 mi. east of Hwy. 69 easterly.....	5.85	1965	5.85	14,010
69	Grundy Park.....	1.34	1965	1.34	2,020
531	Hwy. 17 to Bonfield.....	2.50	1965	2.50	4,999
TOTALS.....		18.64		18.64	51,277

## Bituminous Mulch and Cold Mix

HWY. No.	LOCATION	MILES IN JOB	THIS FISCAL YEAR	
			MILES COMPL.	TONS PLACED
11	White Fawn Lake (stock pile).....	—	—	1,498
64	Noelville (stock pile).....	—	—	965
534	2.5 mi. west of Nipissing.....	1.00	1.00	1,600
534	Beatty Creek.....	0.40	0.40	640
654	5 mi. west of Hwy. 11.....	1.10	1.10	1,760
17TC	Mattawa curve revision.....	0.50	0.50	280
TOTALS.....		3.00	3.00	6,743

## Bituminous Prime on Gravel Roads

HWY. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
64	Field to Martin River various sections.....	4	12,800	441
64	Noelville easterly.....	11	35,200	1,485
522	1 mi. east of Commanda easterly.....	3	9,600	405
524	Hwy. 522 to Hwy. 534.....	3	9,600	405
528,				
528A	Hwy. 64 to Wolsely Bay and Pine Cove.....	11	35,200	1,485
534	Powassan to Restoule various section.....	16	51,200	2,160
535	Noelville northerly.....	11	35,200	1,485
539,				
539A	Field to River Valley.....	11	35,200	1,485
539	Warren to Jct. of Hwys. 539 and 539A.....	16	51,200	2,160
607,				
607A	1 mi. south of Hwy. 64 to Hwy. 69 and French River....	6	19,200	810
TOTALS.....		92	294,400	12,321



### Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	12 mi. north of North Bay northerly various sections.....	3.00	4,027

### Bituminous Surface Treatment

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS CHIPS USED
63	Redbridge 30 Acre Lake various sections.....	1.00	2,500	150
64	6.83 mi. east of Hwy. 69 easterly.....	4.70	11,769	705
522	Trout Creek westerly.....	1.10	2,754	165
522	Commanda westerly.....	5.00	12,500	750
522	Golden Valley.....	1.00	2,500	150
522	5 mi. east of Arnstein.....	1.00	2,500	150
522	Loring easterly.....	5.00	12,500	750
533	4 mi. north of Mattawa northerly.....	6.50	16,276	975
534	Nipissing westerly.....	1.15	2,880	172
630	Hwy. 17 southerly.....	3.00	7,500	450
630	3.4 mi. south of Hwy. 17 southerly.....	4.00	10,016	600
TOTALS.....		33.45	83,695	5,017

### Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	TYPE OF STRUCTURE
17TC	Amable Du Fond River 9.3 mi. west of Mattawa.....	1965	Steel girder
17TC	Pautois Creek 7 mi. west of Mattawa.....	1965	Ridged frame



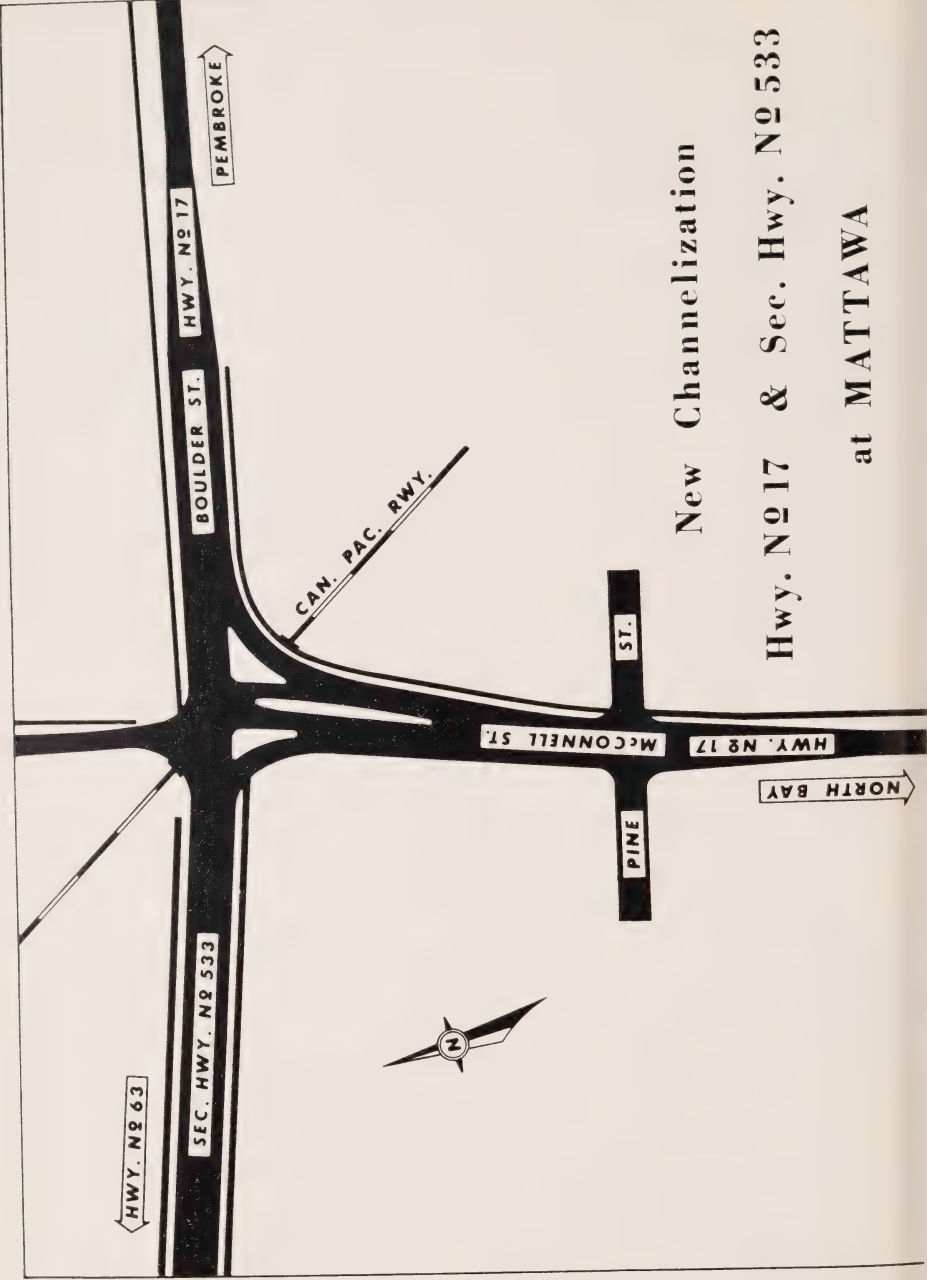
Hwy. 17 — East of Rutherglen. photo 7264 — (North Bay)

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	Powassan, Jct. Hwy. 534 intersection only.....	0.26	6,856
11	12 mi. north of North Bay northerly, various sections.....	17.00	3,286
11, 17	North Bay by-pass at O'Brien Street intersection only.....	0.25	2,966
17	Rutherglen easterly to Hwy. 630.....	0.20	17,843
17	Bissetts Creek westerly.....	0.50	10,695
17	Hwy. 630 easterly.....	2.00	49,690
17	Stonecliffe, various stock piles.....	—	10,004
17	Mattawa curve revision.....	0.50	1,543
63	30 Acre Lake, various stock piles.....	—	9,999
64	.5 mi. south of Lavigne southerly.....	5.12	56,906
64	Village of Noelville.....	1.55	26,250
64, 607	2 mi. east of Hwy. 69 easterly.....	3.80	62,376
64	Rutter, Jct. Hwy. 69 intersection only.....	0.29	3,700
69	Grundy Park.....	1.34	5,900
622	Commanda stock piles.....	—	19,038
631	Hwy. 17 to Bonfield.....	2.54	26,918
633	South of Hwy. 63, various stock piles.....	—	24,995
635	Veuve River, 4,000 ton on road, remainder stock piled.....	7.00	10,000
635	St. Charles, stock piled.....	—	10,606
630	Kiosk, stock piled.....	—	10,083
654	7 mi. north of Nipissing, stock piled.....	—	15,000
TOTALS.....		42.35	384,654

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
1, 11B	4 mi. north of Burks Falls to Latchford.....	135.6	11,866
7, 17B			
TC	14 mi. west of Pembroke to Hagar.....	168.4	7,780
63	North Bay to Temiskaming.....	40.4	847
64	Rutter to Jct. Hwy. 11.....	96.2	12,682
64	Callander to Jct. Hwy. 17.....	5.5	223
23	Hwy. 11 to airport.....	3.1	169
24	Hwy. 11 easterly.....	4.9	424
22,			
24			
28,			
28A	Trout Creek to Loring.....	52.5	2,142
63	Hwy. 64 to Wolseley Bay.....	11.6	3,150
64	Mattawa to Jct. Hwy. 63.....	32.2	3,349
64	Powassan to Restoule.....	22.0	302
65	Veuve River to Noelville.....	29.9	2,632
69,			
69A	Warren to Field.....	25.6	8,847
67,			
67A	French River to Jct. Hwy. 64.....	7.8	1,768
630	Hwy. 17 to Kiosk.....	18.5	2,628
654	Hwy. 11 to Nipissing.....	14.0	1,273
TOTALS.....		668.2	66,764



New Channelization

Hwy. No 17 & Sec. Hwy. No 533  
at MATTAWA

## Grading and Culverts

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
11	Powassan, Jct. Hwy. 534 intersection only.....	0.26	1965	—	0.26
11, 17 TC	North Bay by-pass at O'Brien Street inter- section only.....	0.25	1965	—	0.25
17TC	Rutherglen to Hwy. 630.....	6.10	1964	5.90	0.20
17TC	Hwy. 630 easterly.....	5.43	1965	—	2.00
17TC	Bissetts Creek westerly.....	5.30	1965	—	0.50
17TC	Mattawa curve revision.....	0.50	1965	—	0.50
63	12 to 19 mi. northeast of North Bay, various sections.....	3.00	1965	—	2.40
64	Village of Noelville.....	1.55	1965	—	1.55
64	.5 mi. south of Lavigne southerly.....	5.12	1965	—	5.12
64	Field northerly.....	3.00	1964	1.75	1.25
64, 69	Rutter intersection only.....	0.29	1965	—	0.29
64,					
607	2 mi. east of Hwy. 69 easterly.....	5.85	1964	2.05	3.80
69	Grundy Park.....	1.34	1965	—	1.34
522	7 mi. west of Loring westerly.....	6.30	1965	—	5.67
522	Commanda easterly.....	3.00	1964	—	3.00
522	5 mi. west of Trout Creek westerly.....	2.50	1964	2.20	0.30
531	Hwy. 17 to Bonfield.....	2.54	1965	—	2.54
533	2 mi. south of Hwy. 63 southerly.....	4.00	1965	—	2.00
535	4 mi. north of Noelville northerly.....	1.00	1964	0.75	0.25
535	St. Charles, 2 locations.....	1.50	1965	—	1.00
535	5 mi. north of Hagar multiplate culvert.....	0.10	1966	—	0.10
630	Kiosk northerly.....	3.00	1964	1.00	2.00
654	5 mi. west of Hwy. 11.....	1.00	1965	0.75	0.25
	TOTALS.....	62.93		14.40	36.57

## Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11	Powassan, Jct. Hwy. 534 inter- section only.....	0.26	1965	—	0.26	16,636
11,						
17TC	North Bay by-pass, O'Brien Street intersection only.....	0.25	1965	—	0.25	5,107
17TC	Rutherglen to Hwy. 630.....	6.10	1963	5.90	0.20	27,271
17TC	Hwy. 630 easterly.....	5.43	1965	—	2.00	114,760
17TC	Bissetts Creek westerly.....	5.30	1965	—	0.50	16,047
17TC	Mattawa curve revision.....	0.50	1965	—	0.50	1,543
63	12 to 19 mi. northeast of North Bay, various sections.....	3.00	1965	—	2.40	112,929
64,						
507	2 mi. east of Hwy. 69 easterly.....	5.85	1964	2.05	3.80	469,592
64, 69	Rutter intersection only.....	0.29	1965	—	0.29	10,171
64	Village of Noelville.....	1.55	1965	—	1.55	78,000
64	.5 mi. south of Lavigne southerly..	5.12	1965	—	5.12	250,760
64	Field northerly.....	3.00	1964	1.75	1.25	11,856
69	Grundy Park.....	1.34	1965	—	1.34	5,900
522	7 mi. west of Loring westerly.....	6.30	1965	—	5.67	99,298



522	Commanda easterly.....	3.00	1964	—	3.00	146,034
522	5 mi. west of Trout Creek easterly	2.50	1964	2.20	0.30	2,542
531	Hwy. 17 to Bonfield.....	2.54	1965	—	2.54	81,585
533	2 mi. south of Hwy. 63 southerly..	4.00	1965	—	2.00	310,122
535	4 mi. north of Noelville northerly..	1.00	1964	0.75	0.25	6,655
535	St. Charles, 2 locations.....	1.50	1965	—	1.00	33,448
535	5 mi. north of Hagar multiplate culvert.....	0.10	1966	—	0.10	2,007
630	Kiosk northerly.....	3.00	1964	1.00	2.00	180,000
654	5 mi. west of Hwy. 11.....	1.00	1965	0.75	0.25	1,604
TOTALS.....		62.93		14.40	36.57	1,983,867

### New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
11	White Fawn Lake new patrol site	Salt shed	Equipment storage	1965	1965
11	White Fawn Lake.....	Patrol office	Office, lunch rooms	1965	1965
11	White Fawn Lake.....	Salt shed	Salt storage	1965	1965
11	White Fawn Lake.....	Loader shed	Loader tool storage	1965	1965
11	North Bay material yard.....	Frame building	Stock room	1965	1966
17TC	Point Alexander.....	Patrol office	Office, lunch room	1965	1965
17TC	Sturgeon Falls new patrol site.....	Patrol office	Office, lunch room	1965	1966
17TC	Sturgeon Falls.....	Salt shed	Equipment storage	1965	1965
17TC	Sturgeon Falls.....	Salt shed	Salt storage	1965	1965
17TC	Sturgeon Falls.....	Loader shed	Loader tool storage	1965	1965
17TC	Stonecliff.....	Field office	Construction Staff	1965	1965
63	Feronia new patrol site.....	Patrol office	Office, lunch room	1965	1965
63	Feronia.....	Salt shed	Equipment storage	1965	1965
63	Feronia.....	Salt shed	Salt storage	1965	1965
63	Feronia.....	Loader shed	Loader tool storage	1965	1965

### Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	4	—	—
Calcium dust layer on gravel roads.....	—	743.21	—
Calcium for de-icing roads.....	—	0.25	—
Development roads built.....	—	—	7.15
Off-road parks maintained.....	11	—	—
Roads snowploughed and kept open, King's highways.....	—	—	454.1
Roads snowploughed and kept open, secondary highways.....	—	—	216.5
Roadside picnic places maintained.....	27	—	—
Routine maintenance, King's highways.....	—	—	454.1
Routine maintenance, secondary highways.....	—	—	216.5
Salt for de-icing roads.....(raw)	—	12,500	—
Salt in sand, stockpiled.....	—	2,398.66	—
Sand for winter maintenance.....	—	79,633	—
Scale houses maintained.....	2	—	—
Seeding by department's forces.....(acres)	74.75	—	—
Signs erected or replaced.....	3,723	—	—
Snow fence erected, dismantled, stored.....	—	—	6.0
Snow hedges planted this year.....	4,000	—	0.4
Weed control.....	—	—	418.65
Zone painting on King's highways.....(gals.)	8,211	—	401.4
Zone painting on secondary highways.....(gals.)	2,631	—	140.1

**DISTRICT No. 14 — NEW LISKEARD**

G. M. Sinclair, P.Eng., District Engineer

**CONSTRUCTION**

The most important single feature of the 1965-66 construction season was the consistently poor weather resulting in the majority of the contracts being behind schedule.

Construction of the Haileybury underpass on Secondary Highway 558 and the Moose Creek structure north of Highway 65 was completed in late summer.

Grading and paving contracts on Highway 11, from Ramore to Matheson 10.14 miles and Highway 65 from Junction 11B and 65 easterly 5.38 miles were completed in the early fall.

Grading of Secondary Highway 655, from Highway 101 northerly 4.4 miles, was completed in early summer and subsequently paved. A contract was awarded for paving on Secondary Highway 655 from 4.4 miles north of Highway 101 northerly 11.62 miles, but due to poor weather only 3 miles had been paved prior to shutdown at the end of the season.

Grading of Secondary Highway 650 from Highway 112 easterly 5.7 miles was completed in the early summer. The paving contract on Highway 101 from Foleyet easterly 29.8 miles which had begun the previous year was completed in early July.

A grading contract on Secondary Highway 576 from 7.9 miles north of Highway 101 northerly 7.3 miles was awarded in late summer and favourable progress had been made by the end of the year.

On Highway 144, three grading contracts totalling 24.0 miles and including the Tatachikapika River Bridge were well advanced and two clearing contracts totalling 26.28 miles were nearing completion.

An invitation bid for the removal of surcharge and placing of a test footing at the O.N.R. crossing on Highway 11 at New Liskeard was awarded and completed in early winter.

**MAINTENANCE**

There was an above-average accumulation of snow during the first part of the winter but a few periods of mild weather in February reduced its depth considerably resulting in a relatively moderate spring runoff with little flooding encountered. The most serious problem during this year's spring breakup was the rapid deterioration of our mulch pavement in some areas which necessitated constant attention and heavy patching efforts on the part of our maintenance forces. Although snow came to stay earlier this year the winter, as a whole, has been relatively trouble-free and a considerable improvement over what the district was subjected to last year.

Summer maintenance was generally routine in nature although the weather was extremely wet from the beginning of July to on into September. The following items are of particular note—364 miles of gravel highways were treated with liquid and flake calcium for dust control, 17.0 miles of paved highways were surface treated, 190 miles of weed and brush spraying was carried out and approximately 386 miles of highways were zone painted. The bridge crew carried out repairs of a routine nature, finished constructing a pile bent composite deck structure over Bear Creek in Elk Lake, and erected three Bailey bridges on Highway 560.

Property has been purchased for a new patrol site at Earlton and two salt sheds were erected, one at Balls Corners and the other at the new Larder Lake patrol yard site where some preliminary development work was carried out during the year. There was an additional 4 miles of secondary highway assumed into the district's road system during the year. There were 36 sign, 73 building, 70 entrance, and 15 encroachment permits issued during the year and 143 sign permits renewed.

### Automatic Signals at Railway Crossings

HWY. No.	RAILWAY	LOCATION	TYPE
655	O.N.R.	Timmins—Texas Gulf Road .....	Automatic flashers and bell
610	O.N.R.	Barber's Bay .....	Automatic flashers and bell
610	O.N.R.	Dugwall.....	Automatic flashers and bell
650	O.N.R.	Jardine (Dane).....	Automatic flashers and bell
558	O.N.R.	Haileybury.....	Subway

### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11	Matheson southerly.....	10.14	1965	—	10.4	23,100
65	Jct. Hwy. 11 easterly.....	5.38	1965	—	5.38	12,150
101	Foleyet easterly.....	29.5	1964	10.0	19.5	23,630
655	4.4 mi. north of Hwy. 101 northerly	4.0	1965	—	4.0	6,160
655	From Hwy. 101 to 4.4 mi. northerly	4.4	1965	—	4.4	7,240
693	Development Road, Timmins easterly.....	5.9	1965	—	5.9	9,450
784	Development Road from Hwy. 693 to Delnite Mine.....	0.6	1965	—	0.6	950
558	Haileybury underpass.....	0.6	1964	—	0.6	2,750
TOTALS.....		60.52			60.52	85,430



Hwy. 101 — East of Foleyet. photo 7290 — (New Liskeard)



## Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	MILES IN JOB	MILES	THIS FISCAL YEAR MILES	TONS PLACED
			COMPL. PREVIOUS YEARS		
569	From Hwy. 11 to Hilliardton Bridge.....	7.0	—	7.0	10,408
577	From Hwy. 101 to Hwy. 11.....	7.0	—	7.0	11,355
510	From Dugwall to Connaught.....	5.3	—	5.3	7,975
524	From 1 mi. south to 7 mi. south of Hwy. 66....	6.0	—	6.0	9,000
	Englehart stockyard.....	0.45	—	0.45	636
D.R.					
585R	From Hwy. 11 to Kapkigiwan Park.....	1.3	—	1.3	2,731
101	Stockpiled—Foley et east—4,840 tons—SC3				
11	Stockpiled—Matheson—1,980 tons—SC3				
11	Stockpiled—Sesekinika—1,000 tons—SC3				
	Stockpile mulch—day labour 7,820 (Plant mix)	—	—	—	7,820
	Throughout district—4,300 tons.....	—	—	—	4,300
	TOTALS.....	27.05		27.05	42,105

## Bituminous Surface Treatment

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
569	5 mi. to 10 mi. east of Jct. Hwys. 624 and 569.....	5.0	14,984	346.69
570	Jct. Hwy. 11 to Sesekinika.....	2.0	5,994	138.68
510	Jct. Hwy. 101 to 5 mi. north.....	5.0	14,984	346.69
524	Jct. Hwy. 11 to 3 mi. north.....	3.0	8,991	208.02
524	Jct. 571 to end (airport).....	2.0	5,994	138.68
	TOTALS.....	17.0	50,947	1,178.76

## Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
558	Haileybury underpass.....	1964	1965	1965	Reinforced concrete, structural steel
Off 65	Moose Creek bridge.....	1965	1965	1965	Reinforced concrete
Dev. Rd. 767	Shannon bridge (Wright Creek), 3 mi. west of Quebec boundary.....	1964	1965	1965	Structural steel and creosoted timber piles, concrete deck
65	Bear Creek, Elk Lake.....	1965	1965	1965	Timber piles, concrete deck
560	Opikinimika River.....	1965	1965	1965	Double single bailey 90' long
560	Donnegana River.....	1965	1965	1965	Single single bailey 40' long
560	Little Mollie bridge.....	1965	1965	1965	Single single bailey



## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11TC	Matheson .....	—	6,000
11TC	Sesekinika .....	—	7,150
11TC	Matheson southerly .....	10.14	142,770
65	Hwy. 11 easterly .....	5.38	66,360
65	Elk Lake .....	—	480
65	Elk Lake northerly .....	—	9,000
66	Jct. Hwy. 65 .....	—	3,000
66	Larder Lake westerly .....	—	10,000
101	Jct. 101 and 572 .....	—	7,970
101	Foleyet easterly .....	29.5	104,350
144	From 8 to 16 mi. south of Hwy. 101 .....	—	17,680
558	Hwy. 11 westerly .....	8.0	5,960
558	Haileybury underpass .....	1.03	7,730
560	Elk Lake westerly .....	—	9,990
560	7 to 25 mi. west of Elk Lake .....	18.0	24,020
560	Elk Lake easterly .....	—	9,990
566	Matachewan westerly .....	—	6,000
567	North Cobalt southerly .....	—	18,000
572	Hwy. 101 southerly .....	4.6	7,030
576	Hwy. 101 northerly .....	—	7,980
576	7.9 mi. north of Hwy. 101 northerly .....	—	29,270
610	Connaught southwesterly .....	5.3	24,990
624	Hwy. 66 southerly .....	6.0	26,970
650	Hwy. 112 easterly .....	5.7	36,200
655	Hwy. 101 northerly .....	4.4	30,400
655	Hwy. 101 northerly .....	4.4	4,790
655	4.4 mi. north of Hwy. 101 northerly .....	3.7	16,330
693	Development Road, Timmins easterly .....	5.9	9,210
784	Development Road from Hwy. 693 to Delnite Mine .....	0.6	600
TOTALS .....		112.65	650,220

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		TOTAL MILES	TONS PLACED
11	Latchford to Porquis Junction .....	120	2,519
65	Quebec boundary to Matachewan .....	80	897
66	Quebec boundary to Jct. Hwy. 65 .....	60	144
67	Porquis Junction to Jct. Hwy. 101 .....	14	51
11B	South Jct. 11B-11 to north Jct. 11B-11 .....	12	145
101	Quebec boundary to Shawmere River .....	150	24,845
558	Haileybury to end (Montreal River) .....	17	2,100
560	Jct. Hwy. 11 to Gogama .....	145	9,963
562	Jct. Hwy. 11 to Jct. Hwy. 65 .....	9	85
564	Jct. Hwy. 112 to Boston Creek .....	5	184
566	Matachewan to end .....	16	2,005
567	Jct. Hwy. 11 to end (Loon Lake) .....	22	1,800
568	Jct. Hwy. 11 to Kenogami Station .....	1	213
569	Jct. Hwy. 11 to Jct. Secondary Hwy. 624 .....	18	10,839
571	Jct. Hwy. 11 to Jct. Secondary Hwy. 562 .....	3	21
573	Jct. Hwy. 11 to Jct. Secondary Hwy. 560 .....	12	36
576	Jct. Hwy. 101 to end .....	18	8,176
577	Jct. Hwy. 101 to Jct. Hwy. 11 .....	7	180
610	Jct. Hwy. 101 to Jct. Hwy. 67 .....	10	179
624	Jct. Hwy. 11 to Jct. Hwy. 66 .....	27	4,363
626	Jct. Hwy. 101 to Jct. Hwy. 67 .....	20	87
629	Jct. Hwy. 101 to end (airport) .....	7	159
TOTALS .....		773	68,991

## Grading and Culverts (Construction)

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
11	Matheson southerly.....	10.14	1965	—	10.14
11	O.N.R. overhead crossing New Liskeard.....	.08	1965	—	.08
65	Jct. Hwy. 11 easterly.....	5.38	1965	—	5.38
101	Foleyet easterly.....	29.5	1964	10.0	19.5
144	From 8 to 16 mi. south of Hwy. 101.....	8.31	1965	—	7.81
144	From Hwy 101 to 8 mi. southerly.....	7.94	1965	—	1.19
144	From 24 to 33 mi. south of Hwy. 101.....	8.75	1965	—	2.19
558	Haileybury underpass.....	1.03	1964	—	1.03
576	From 8 to 16 mi. north of Hwy. 101.....	7.57	1965	—	4.46
650	From Hwy. 112 easterly 5.7 mi.....	5.7	1964	—	5.7
655	From Hwy. 101 northerly 4.4 mi.....	4.4	1965	2.0	4.4
TOTALS.....		89.06		12.00	61.88

## Grading and Installing Culverts (Maintenance)

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
566	Matachewan westerly for 6 mi. (sections rock widening).....	0.3	1966	—	0.3
560	Sudbury-Timiskaming boundary for 23 mi. (sections rock widening).....	0.75	1966	—	0.75
65	Sand Hill revision—approximately 20 mi. west of New Liskeard (day labour).....	1.0	1965	—	1.0
560	Elk Lake westerly 2.4 mi.....	6.0	1965	2.80	1.2
567	Jct. Hwy. 11 southerly.....	1.0	1965	—	1.0
610	Dugwall to Connaught.....	5.3	1965	—	5.3
624	Approximately 6 mi. north of Jct. 624 and 569	0.5	1965	—	0.5
Dev. Rd.					
585R	Hwy. 11 to Kapkigiwan Park.....	1.3	1965	—	1.3
TOTALS.....		16.15		2.80	11.35

## Granular Base on New Grading (Construction)

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11TC	Matheson southerly (reconstruction).....	10.14	1965	—	10.14	250,300
65	Hwy. 11 easterly (revision and reconstruction).....	5.38	1965	—	5.38	179,780
144	From 8 to 16 mi. south of Hwy. 101 (new).....	8.31	1965	—	7.81	58,030
101	Foleyet easterly (reconstruction)....	29.5	1964	—	29.5	170,390
576	8 mi. north of Hwy 101 northerly (revision and reconstruction).....	7.57	1965	—	4.84	123,780
550	Hwy. 112 easterly (revision and reconstruction).....	5.7	1964	—	5.7	33,030
555	Hwy. 101 northerly (new).....	4.4	1965	—	4.4	30,995
TOTALS.....		71.00			67.77	846,305

## Granular Base Laid on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	THIS FISCAL YEAR	
				PREVIOUS YEARS	MILES COMPL.	TONS PLACED
65	From Jct. 11 and 65, 20 mi. to 21.5 mi. (west (Sand Hill).....	1.0	1965	—	1.0	29,000
560	Elk Lake west, 2.8 to 4.0 mi.....	6.0	1964	2.8	3.6	24,000
624	From Jct. 569, 624 and 11, 6.0 mi. north.....	0.5	1965	—	0.5	19,200
	TOTALS.....	7.5		2.8	5.1	72,200

## Granular Base Where No Grading Done

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	THIS FISCAL YEAR	
				PREVIOUS YEARS	MILES COMPL.	TONS PLACED
610	From 5 mi. northeast Jct. Hwy. 11 to Connaught.....	10.3	1964	5.0	5.3	8,300
567	From north Cobalt south.....	—	1965	—	1.0	5,632
11	From Latchford north 4 mi. (build- ing shoulders to grade).....	4.0	1965	—	4.0	5,352
11	Tri-Town lookout.....	—	1964	—	—	337
101E	From 4.0 mi. to 5.0 mi. east of Jct. 11 and 101E.....	1.0	1965	—	1.0	4,100
610	From Jct. Hwy. 11 to 0.3 mi. north	0.3	1965	—	0.3	1,260
576	From 3.0 mi. to 10.0 mi. north of Jct. 101 and 576.....	7.0	1965	—	7.0	9,035
560	From 18 mi. to 30 mi. west of Shiningtree (sections).....	12.0	1965	—	12.0	3,172
101	Contract 64-193 from 6.0 to 6.5 mi. west of Jct. 101 and 616....	0.5	1965	—	0.5	4,100
	TOTALS.....	35.1		5.0	31.3	41,288

## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
65E	Ball's Corners, extended salt stor- age for equipment, 28' x 44', DHO forces.....	Extended drawing H-3-111	Equipment storage	1965	Completed except for painting. This to be done in 1966.
624	Larder Lake standard 300 ton salt storage, 28' x 36', DHO forces	Drawing H-3-111	Bulk salt storage	1965	Completed except for wiring and painting. To be done in 1966.



Hwy. 11 — Tri-Town By-pass. photo 7286 — New Liskeard

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	4	—	—
Calcium dust layer on gravel roads.....	Liquid	612	204
	Flake	485	160
Roads snowploughed and kept open, King's highways.....	—	—	472
Roads snowploughed and kept open, secondary highways.....	—	—	392
Roadside picnic places maintained.....	16	—	—
Routine maintenance, King's highways.....	—	—	472
Routine maintenance, secondary highways.....	—	—	392
Salt for de-icing roads.....(raw)	—	12,000	—
Salt in sand, stockpiled.....	—	1,778	—
Sand for winter maintenance.....	—	55,000	—
Seeding by department's forces.....(acres)	37	—	—
Signs erected or replaced.....	2,939	—	—
Snow fence erected, dismantled, stored.....	—	—	80
Snow hedges planted this year.....	293	—	0.3
Weed control.....(Brush spraying only in 1965-66)	—	—	190
Zone painting on King's highways.....(gals.)	5,714	—	386
Zone painting on secondary highways.....(gals.)	1,186	—	99



**DISTRICT No. 16 — COCHRANE****J. D. Foster, P.Eng., District Engineer****CONSTRUCTION**

Reconstruction of Highway 11 was carried on this year and a grading, drainage, granular base course and hot mix paving contract was begun in June on the section between Moonbeam and Fauquier. Work progressed very well in the early stages of this contract, however, very adverse weather conditions slowed progress considerably and the contractor shut down in late fall until next construction season with a small amount of grading work to be completed and the hot mix paving to be done.

The following contracts (begun in the spring) which were scheduled for completion in the fall now have to be completed next construction season: grading, drainage and granular base, 0.32 miles on Secondary Highway 578 at Jacob's Creek, and grading, drainage and granular base on Secondary Highway 631 from Hornepayne southerly 6.72 miles.

Two equipment rental contracts shut down in the late winter were carried on during the summer, and grading, drainage and granular base was completed from 8 miles east of Cochrane easterly 11 miles Secondary Highway 652. Grading, drainage granular base work by equipment rental on Tertiary Road 807, Smooth Rock Falls 29 miles northerly, work on this section was taken over from the contractor during July by the Department of Highways and this will be completed the summer of 1966.

The section of Tertiary Road 807 from 29 miles north of Smooth Rock Falls to Pinard has been completed.

Two clearing contracts, from 15 miles to 28 miles south of Hornepayne on Secondary Highway 631 and clearing right-of-way between 55 and 75 miles west of Hearst on Highway 11 were begun in the fall of 1965. The contract south of Hornepayne carried on during the winter and will be completed in the spring of 1966, however, the contract on Highway 11 was shut down for the winter and this will be completed in the spring of 1966.

Construction of a Bailey bridge and approaches to eliminate the ferry on the Abitibi River 8 miles east of Cochrane Secondary Highway 574 was begun during the winter of 1966.

Construction generally was slow this year due to very wet weather conditions.

**MAINTENANCE**

District mileage increased in 1965 with the addition of Secondary Highway 652 from 8.0 miles east of Cochrane easterly 11 miles and Tertiary Road 807, Smooth Rock Falls, northerly to Frazerdale, 45 miles.

Winter temperatures were somewhat above normal with frequent snowfall and moderate total accumulation.

Extensive day labour work of clearing and grading was carried out on Secondary Highway 631 during the winter months, also clearing of proposed diversions of Secondary Highway 625 was undertaken. 60,000 cubic yards of pit gravel was applied to various sections of Secondary Highways.

Diversion of a section of Cuckoo Creek to eliminate two large structures on Secondary Highway 583 was undertaken and completed with very favourable results.

Considerable day labour work, grading, drainage and culvert installation was carried out on Secondary Highways 574, 579 and 583.

Priming of several secondary highways was undertaken with good results.

Automatic rail crossing signals were installed at three locations on Secondary Highway 574 and at one location on Secondary Highway 583.

Development of the Smooth Rock Falls patrol yard was completed, and a new four bay patrol garage started. A new salt shed was erected at Cochrane and development of a new patrol yard was undertaken at Kapuskasing and Opasatika.

Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
574	C.N.R.	C.N.R. mileage 169.42 lot 4, 5, con. 2 Fox township..	Flashing lights and bell
574	C.N.R.	C.N.R. mileage 173.22 lot 12, con. 2 and 2 Fox township.....	Flashing lights and bell
574	C.N.R.	C.N.R. mileage 174.69 lot 2 and 3, con. 3 Brower township.....	Flashing lights and bell
583	A.C.R.	A.C.R. mileage 285.75 (6 mi. north of Coppell).....	Flashing lights and bell



Hwy. 631 — South of Hornepayne, photo 7278 — (Cochrane)

### Bituminous Prime on Gravel Roads

HWY. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS SAND USED
583	Hearst to Lac Ste. Therese.....	7.33	21,800	1,274
636	Intersection Hwy. 11 and Hwy. 636 north 3.0 mi.....	3.00	8,362	540
574	East limits town of Cochrane easterly.....	7.00	16,750	1,227
11B	Intersection Hwy. 11 and Hwy. 11B 4 mi. south of Coch- rane easterly through Hannah township to intersection of Hwy. 11B and Hwy. 11, 10 mi. south of Cochrane....	6.00	16,750	1,006
TOTALS.....		23.33	63,662	4,047

### Bridges Built

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE TO STRUCTURE
11	2.75 mi. west of Fauquier.....	1965	1965	1965	Concrete box
574	6.6 mi. east of Cochrane east limits.....	1966	—	—	Bailey bridge
652	2.9 mi. east of Jct. of secondary Hwys. 574 and 652.....	1964	1964	1965	Bailey bridge

### Crushed Gravel and Stone on Roads by Contract

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
574	Various locations from Cochrane to Norembega.....	18.0	9,004.30
11	Smooth Rock Falls to Strickland.....	11.0	7,709.8
11	Cochrane to Driftwood.....	20.0	9,995.2
11B	South Jct. Hwys. 11 and 11B to north Jct. Hwys. 11 and 11B.....	9.5	3,797.1
625	Jct. Hwys. 11 and 625 to Caramat.....	16.0	7,962.3
579	Cochrane to Gardiner Ferry.....	16.0	7,071.2
583	Hearst to Meade.....	23.0	12,930.0
652	8.0 mi. east of Cochrane easterly 11.0 mi.....	11.0	56,499.8
807	From Smooth Rock Falls northerly 45 mi.....	16.0	45,528.0
TOTALS.....		140.5	160,227.9

### Crushed Gravel and Stone on Roads by Department's Forces

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	Cochrane to Porquis Jct.....	30.00	108
11	Cochrane to Hearst.....	133.00	566
11	Hearst to Longlac.....	130.00	1,144
67	Iroquois Falls to Hwy. 11.....	6.00	53
11B	Old highway through Hannah Township.....	6.20	18
11B	Old highway through Hunt.....	9.50	1,595
SECONDARY HIGHWAYS NUMBERS			
574	Cochrane to Norembega.....	18.00	14,167
577	Ansonville to Monteith.....	8.00	504
578	Herman Lake to Montrock.....	6.00	80
579	Cochrane to Gardiner.....	18.00	37,694
581	Intersection Hwy. 11 and Hwy. 581 north.....	3.50	477
583	Lake Ste. Therese to Mead.....	40.18	10,309
625	Jct. Hwys. 11 and 625 to Caramat.....	20.00	252
631	Jct. Hwys. 11 and 631 to Hornepayne.....	46.00	3,696
636	Jct. Hwys. 11 and 636 to Frederickhouse.....	3.00	571
TOTALS.....		477.38	71,234

## Grading and Culverts

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES
				COMPL. THIS YR.
11	From 2 mi. east of secondary Hwy. 581 easterly to 1.2 mi. east of Fauquier.....	5.84	1965	5.84
578	Jacob's Creek 0.6 mi. west of Iroquois Falls.....	0.82	1965	—
631	From Hornepayne south 6.72 mi. southerly.....	6.72	1965	6.72
652	From 8 mi. east of Cochrane 11.0 mi. to Wade Lake (by equipment rental).....	11.00	1964	11.00
TERTIARY ROAD				
807	Smooth Rock Falls northerly 29 mi. (by equipment rental).....	28.30	1964	28.30
807	From 29 mi. north of Smooth Rock Falls 16 mi. northerly to Pinard.....	16.22	1964	16.22
	TOTALS.....	68.90		68.08

## Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
11	From 2 mi. east of secondary Hwy. 581 easterly to 1.2 east of Fauquier.....	5.84	1965	5.84	328,167.00
578	Jacob's Creek 0.6 mi. west of Iroquois Falls.....	.82	1965	—	76,891.00
631	From Hornepayne to southerly 6.72 mi.....	6.72	1965	6.72	178,342.00
652	From 8 mi. east of Cochrane easterly 11 mi. to Wade Lake (by equipment rental).....	11.00	1964	11.00	148,017.37
TERTIRAY ROAD					
807	Smooth Rock Falls 29 mi. northerly (by equipment rental).....	28.3	1964	28.3	—
807	From 29 mi. north of Smooth Rock Falls 16 mi. northerly to Pinard.....	16.22	1964	16.22	222,642.32
	TOTALS.....	68.90		68.08	877,937.60

## Granular Base Where No Grading Done

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
74	Cochrane to Norembega.....	2.5	1966	2.5	14,683
79	Cochrane to Gardiner.....	3.0	1966	3.0	17,092
83	Hearst to Mead.....	3.0	1966	3.0	13,392
31	Jct. Hwys. 11 and 631 to Hornepayne.....	1.0	1966	1.0	11,201
36	Jct. Hwy. 11 and Frederickhouse.....	.5	1966	.5	1,920
	TOTALS.....	10.0		10.0	58,288

## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
TC	Cochrane district headquarters .....	Standard salt shed	Salt storage	1965	To be completed this year (Hydro)
	28 ft. x 36 ft.—Concrete foundation and frame structure.				





Hwy. 11 — East of Moonbeam. photo 7273 — (Cochrane)

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	8	—	—
Calcium dust layer on gravel roads.....	—	999	—
Calcium for de-icing roads.....	—	32	—
Roads snowploughed and kept open, King's highways.....	3	—	320.50
Roads snowploughed and kept open, secondary highways.....	10	—	160.69
Roadside picnic places maintained.....	12	—	—
Routine maintenance, King's highways.....	3	—	320.50
Routine maintenance, secondary highways.....	10	—	160.69
Salt for de-icing roads.....(raw)	—	4,416	320.60
Salt in sand, stockpiled.....	—	910	—
Sand for winter maintenance.....	—	24,453	—
Scale houses maintained.....	5	—	—
Seeding by department's forces.....(acres)	238 1/4	—	—
Signs erected or replaced.....	804	—	—
Snow fence erected, dismantled, stored.....(feet)	45,300	—	—
Weed control on Highways 11, 11B, 67, 578, 581, 583, 631, 625, 636.....(lbs.)	—	678	—
Zone painting on King's highways.....(gals.)	2,738	6,790	126.5
Zone painting on secondary highways.....(gals.)	85	—	298.3
			7.4

**DISTRICT No. 17 — SUDBURY****T. A. Sharpe, P.Eng., District Engineer****CONSTRUCTION**

Highway 17 was improved by three major contracts during the year. The portion between Hagar and Secondary Highway 606, a distance of 7.69 miles was graded and paved, while from Sutherland Avenue in Sudbury to Balsam Street in Copper Cliff, was also graded to four lane divided standard for a distance of 1.54 miles and paving is to be completed in 1966. From Nairn centre easterly 5.69 was treated in various locations for frost heaving and will be completely resurfaced this summer, and Nairn centre westerly for 11.08 miles was treated for frost heaves in various locations.

Highway 68 from Little Current southerly 10 miles was paved with hot mix. This contract also included the installation of storm sewers, curb and gutter and paving the main streets in the town of Little Current.

To the north of this a contract is underway for grading, drainage and granular base from Goat Island Bridge northerly to LaCloche Channel, a distance of 7 miles. This will complete the rebuilding of Highway 68 from Highway 17 to 0.9 miles north of swing bridge at Little Current with the exception of the paving of this section which is scheduled for this year. On Highway 69, a contract for grading, drainage, granular base and hot mix paving from Val Caron to Hanmer is expected to be completed by August 1966.

In the village of Garson, Secondary Highway 541 is being reconstructed to four lane standards including storm sewers and hot mix paving.

A contract for hot mix paving was completed on Highway 144 (previously designated Secondary Highway 544), the proposed Sudbury to Timmins route, for a distance of 8 miles from Windy Lake to Cartier while a new contract for grading, drainage and granular base is underway for 2½ miles north of Benny northerly 6½ miles. This latter contract is the first new portion of the Sudbury Timmins route under construction by this district.

An additional 8 miles of right-of-way beyond the end of this work is at present being cleared preparatory to the calling of another grading contract. Snow-mobiles were found to be most useful in transporting the survey crews to the location.

On Manitoulin Island, two smaller contracts for grading, drainage and granular base were completed, one on Highway 68, 6½ miles north of South Bay Mouth for a distance of a half mile at "Bowerman's Hill" and the other on Secondary Highway 40, 2 miles north of Silverwater, a revision 0.93 in length at "Devil's Elbow".

**MAINTENANCE**

Normal maintenance operations continued throughout the district during 1965-66.

Shoulder stabilization was completed on Highway 17 in the Naughton and Nairn areas.

The painting of 13 bridges was completed by contract.

Alignment, shoulder, and drainage improvements to secondary roads were extensively carried out on a priority basis.



The overlay method of zone painting initiated this year appears to be a definite improvement over the past method.

Three patrols (Whitefish Falls, Dunlop Lake and Blind River) welcomed the move into three completely renovated garages acquired at Whitefish Falls, Elliot Lake, and Blind River respectively. Grading and paving of our patrol yards at Wahnapiatae, Garson and Little Current has decreased maintenance costs, while increasing the aesthetic values. Three standard salt sheds were erected as required.

The past winter was much less severe than the preceding two winters, however, the wide fluctuations in temperature caused some problems, particularly break-ups related to relatively high temperatures and rainfall in December. On December 31st the high recorded temperature was 50°F.

Our winter works projects consisted of realignments through much rock on Secondary Highways 537, 549 and 637, brushing, development of picnic sites at various locations and the replacement of several small structures.

Building permits and encroachment permits were approved. (90 entrances; 123 buildings; and 5 encroachments).

#### Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNALS
545	C.N.R.	Dennie Street town of Capreol.....	2 flashing lights and 1 bell
545	C.N.R.	South of Milnet.....	2 flashing lights and 1 bell
634	C.P.R.	1 mi. north of Jct. Hwys. 544 and 634.....	2 flashing lights, 2 short arm gates, 1 bell, 2 extra flashing lights



Hwy. 68 — North of Whitefish Falls. photo 7245 — (Sudbury)

Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
17	Hagar to Markstay and DHO yard—Wahnapiatae	7.69	1964	7.69	14,547.52
17	Sutherland Ave. (Sudbury) to Balsam St. (Copper Cliff)	—	1965	—	48.08
17	Nairn Centre to 5.69 mi. east and 11.08 mi. westerly	—	1965	—	5,351.00
68	Little Current southerly to 4.6 mi. south of She- guiandah	12.4	1964	12.4	24,209.71
69	Val Caron to Hanmer and Chelmsford DHO patrol yard	—	1965	—	540.00
541	Garson Village, DHO patrol yard and 1.1 mi. of Hwy. 541	—	1965	—	4,010.00
544	2.0 mi. west of S.H. 544A to Cartier	8.2	1965	8.2	11,384.50
TOTALS				17.13	60,090.81

Bituminous Mulch and Cold Mix

HWY. No.	LOCATION	THIS FISCAL YEAR	
		TONS PLACED	
17	D.H.O. patrol yard—Wahnapiatae (stockpiled)	259.75	
17	D.H.O. patrol yard—McKerrow (stockpiled)	570.23	
17	D.H.O. patrol yard—Whitefish (stockpiled)	147.04	
69	D.H.O. patrol yard—Regent Street (stockpiled)	993.04	
69	D.H.O. patrol yard—1.0 mi. north of Hanmer (stockpiled)	302.35	
540	D.H.O. patrol yard—Little Current (stockpiled)	982.93	
541	D.H.O. patrol yard—Garson (stockpiled)	498.91	
TOTAL		3,754.25	

Bituminous Prime on Gravel Roads

HWY. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
68	10.7 mi. south of Little Current to South Bay Mouth	32.0	77,749	2,762.7
26	From Hwy. 69 to Britt	2.3	3,612	130.6
529	From Hwy. 69 to Hwy. 529A	12.2	17,481	622.9
529A	From Jct. Hwys. 529 and 529A to Bayfield Warf	2.8	4,000	144.2
540	Jct. Hwys. 542 and 540 westerly and Johnston's Corner to Gore Bay	12.7	33,331	1,185.6
42	From Gore Bay to Jct. 542 and 551	17.0	50,816	1,806.5
49	From Hwy. 17 to 2.0 mi. from Lake Penage	7.0	21,893	779.6
51	From Mindemoya to West Bay	7.0	13,917	496.4
44	From Jct. 529 and 644 southerly	0.5	1,873	66.8
TOTALS		93.5	224,672	7,995.3

Bituminous Resurfacing of Old Pavement

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
57	From Woodward Ave. to 0.35 mi. north on secondary Hwy. 557	0.35	243.75



## Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
639	Boland River (approximately 20 mi. north of Elliot Lake).....	1964	1965	1965	Steel beam

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
17	Hagar to Markstay and D.H.O. patrol yard—Wahnapitae.....	7.69	128,342.68
17	Sutherland Ave. (Sudbury) westerly to Balsam St. (Copper Cliff).....	1.54	17,285.00
17	From Nairn Centre easterly 5.69 to 11.08 mi. westerly (various).....	17.00	43,624.00
68	Little Current southerly to 4.6 mi. south of Sheguiandah.....	12.40	259,518.74
68	Bowerman's Hill.....	0.51	2,575.00
68	Goat Island channel to La Cloche channel.....	—	8,260.00
69	Val Caron to Hanmer and Chelmsford patrol yard.....	—	22,900.00
108	Approx. 14.7 mi. north of Elliot Lake northerly to intersection of Hwy. 546.....	7.61	31,500.00
540	Devil's Elbow.....	0.93	7,191.00
540	From 7.0 mi. west of Little Current westerly.....	14.0	9,996.48
541	Garson village and 1.1 mi. of Hwy. 541.....	2.1	28,134.00
544	2.0 mi. west of S.H. 544A to Cartier.....	8.2	10,628.00
17	D.H.O. patrol yard—Whitefish (stockpiled).....	—	10,007.6
68	D.H.O. patrol yard—Little Current (stockpiled).....	—	6,000.14
69	D.H.O. patrol yard—Rutter (stockpiled).....	—	7,500.00
69	D.H.O. patrol yard—Britt (stockpiled).....	—	7,500.00
69	D.H.O. patrol yard—Key River (stockpiled).....	—	10,000.00
69	D.H.O. patrol yard—Val Caron (stockpiled).....	—	6,004.26
537	3.2 mi. south of Hwy. 17 (stockpiled).....	—	11,985.61
540	6.4 mi. east of Silverwater (stockpiled).....	—	7,000.45
540	4.2 mi. west of Silverwater (stockpiled).....	—	6,000.55
540	3.0 mi. east of Meldrum Bay (stockpiled).....	—	4,996.31
540,			
542	Gore Bay D.H.O. patrol yard (stockpiled).....	—	11,998.6
541	0.5 mi. south of Hwy. 545 and 541 on Hwy. 541 (stockpiled).....	—	6,000.5
549	2.5 mi. south of Hwy. 17 (stockpiled).....	—	6,001.5
549	7.5 mi. south of Hwy. 17 (stockpiled).....	—	6,002.3
634	3.2 mi. west of Hwy. 69 on Hwy. 634 (stockpiled).....	—	6,001.9
634	11.0 mi. west of Hwy. 69 on Hwy. 634 (stockpiled).....	—	5,991.4
TOTALS.....		71.98	688,946.4

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
	Various locations in district of Sudbury.....	801.01	229,363.4
634	From Val Caron to Chelmsford.....	1.50	2,606.1
634	1.0 mi. north of secondary Hwy. 634.....	1.00	4,694.5
TOTALS.....		803.51	236,665.4

## Grading and Culverts

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. THIS YR.
17, 606	Hagar to Markstay.....	7.69	1964	7.69
17	Sutherland Ave. Sudbury to Balsam Street Copper Cliff.....	1.54	1965	1.54
Old 17	2 mi. west of Webbwood.....	0.28	1966	0.28
68	LaCloche channel to Little Current swing bridge.....	7.89	1965	5.00
68	Little Current south limits southerly to 4.6 mi. south of She- guiandah including connecting streets, town of Little Current	12.40	1965	12.40
68	6.5 mi. north of South Bay Mouth (Bowerman's Hill).....	0.50	1965	0.50
69	Val Caron to Hanmer.....	5.74	1965	—
537	2.5 mi. south of Hwy. 17 to 4.72 mi. south of Hwy. 17.....	2.22	1966	2.22
537	Various locations Wanup to Wanapitei.....	2.00	1965	2.00
540	2 mi. north of Silverwater (Devil's Elbow).....	0.90	1965	0.90
540	Little Current westerly (various locations).....	7.10	1965	7.10
541	Village of Garson.....	2.11	1965	2.11
542	Mindemoya westerly (various locations).....	5.00	1965	5.00
544	2.5 mi. north of Benny northerly.....	5.99	1965	—
549	1 mi. south of Hwy. 17 southerly.....	1.00	1965	1.00
549	7 mi. south of Hwy. 17 (Rat Lake Narrows).....	0.50	1966	0.50
634	Various locations Val Caron to Chelmsford.....	1.50	1965	1.50
637	24 mi. west of Hwy. 69.....	0.50	1965	0.50
637	34 mi. west of Hwy. 69.....	0.50	1965	0.50
TOTALS.....		65.36		50.74

## Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
	Various throughout district.....	—	1965	—	236.70
17	Construction of turnout for historic site (Naughton).....	—	1965	—	971.00
17	From Nairn Centre easterly 5.69 and 11.08 mi. west- erly (various locations).....	17	1965	17	32,122.00
17	From Sutherland Ave. (Sudbury) to Balsam Street (Copper Cliff).....	1.5	1965	1.5	13,584.00
17, 606	Hagar to Markstay and D.H.O. patrol yard—Wah- napitae.....	8	1964	8	161,751.55
68	Bowerman's Hill.....	0.5	1965	0.5	2,310.00
68, 540	Little Current southerly to 4.6 mi. south of She- guiandah.....	12	1964	12	73,722.87
69	Val Caron to Hanmer and D.H.O. patrol yard Chelmsford.....	5.7	1965	—	32,600.00
40	Little Current westerly 7.1 mi. (various).....	7	1965	7	28,276.65
40	Devil's Elbow.....	0.5	1965	0.5	15,986.00
40	0.2 mi. east of Jct. secondary Hwy. 540 and 551 (new culverts).....	—	1965	—	981.15
41	Garson Village and 1.1 mi. of Hwy. 541.....	2.1	1965	2.1	42,228.00
42	Big Lake to Mindemoya.....	4	1965	4	6,561.00
42	From Mindemoya westerly 5.0 mi. ....	5	1965	5	81,916.50
49	From 1.0 mi. south of Hwy. 17 southerly 1.0 mi. ....	2	1965	1	3,888.65
34	Val Caron to Chelmsford.....	12	1965	12	8,056.65
34	1.0 mi. north at secondary Hwy. 634 (level crossing).....	0.5	1965	0.5	20,293.50
39	Semi White Lake to Hwy. 546.....	7.5	1964	7.5	126,346.00
39	Approx. 2.0 mi. north of Elliot Lake.....	—	1965	—	1,377.00
45	From Jct. Hwys. 529 and 645 westerly 2.5 mi. ....	2.5	1965	2.5	6,833.85
TOTALS.....				81.10	660,043.07

## Granular Base Where No Grading Done

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
17	Shoulder stabilization (various locations westerly).....	16.85	1965	16.85	4,553
17	Shoulder stabilization (various locations westerly).....	32.55	1965	32.55	330
17	Shoulder stabilization (various locations westerly).....	21.70	1965	21.70	1,579
17	Shoulder stabilization (from Copper Cliff to Mc-Kerrow).....	36.10	1965	36.10	7,994
17	Shoulder stabilization (from Copper Cliff to Jct. 17 and 549).....	13.00	1965	13.00	8,744
540	Shoulder stabilization (various locations).....	21.70	1965	21.70	2,505
540A	Shoulder stabilization (various locations).....	2.70	1965	2.70	230
551	Shoulder stabilization (various locations from Hwys. 551 and 542).....	42.80	1965	42.80	5,750
TOTALS.....				187.40	31,685

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
108	D.H.O. patrol yard, Elliot Lake.....	D.H.O. standard salt shed	Salt storage	1965	1966
540	D.H.O. patrol yard, Meldrum Bay..	2 D.H.O. standard salt sheds	Equipment storage (both)	1965	1966
540	D.H.O. patrol yard, Meldrum Bay..	1 D.H.O. standard Temp. patrol office	Patrol office	1965	1966
542	D.H.O. patrol yard, Tehkummah....	1 D.H.O. standard Temp. patrol office	Patrol office	1965	1966
17TC	D.H.O. patrol yard, Walford.....	1 D.H.O. standard Temp. patrol office	Patrol office	1965	1966



Hwy. 144 — South of Cartier. photo 7244 — (Sudbury)

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	13	—	—
Calcium dust layer on gravel roads.....	—	1,312.3	343
Calcium for de-icing roads.....	—	17	—
Off-road parks maintained.....	20	—	—
Roads snowploughed and kept open, King's highways.....	—	—	402.74
Roads snowploughed and kept open, secondary highways.....	—	—	374.96
Roadside picnic places maintained.....	14	—	—
Routine maintenance, King's highways.....	—	—	402.74
Routine maintenance, secondary highways.....	—	—	416.46
Salt for de-icing roads.....(raw)	—	11,697	—
Salt in sand, stockpiled.....	—	2,429.083	—
Sand for winter maintenance.....	—	27,613.5	—
Scale houses maintained.....	1	—	—
Seeding by department's forces.....(acres)	105	—	—
Shrubs received and planted this year.....	1,425	—	—
Signs erected or replaced.....	10,323	—	—
Snow fence erected, dismantled, stored.....	—	—	9
Snow hedges planted this year.....(seedlings)	10,000	—	6.6
Weed control.....	—	—	292
Zone painting on King's highways.....(gals.)	5,910	—	301.2
Zone painting on secondary highways.....(gals.)	1,716	—	118.1



**DISTRICT No. 18 — SAULT STE. MARIE**

**J. A. Knowles, P.Eng., District Engineer**

**CONSTRUCTION**

Grading, drainage and granular base was completed on Highway 101 from 30.8 miles west of Highway 129 westerly 10.7 miles.

Work was also started on the next portion of Highway 101 including grading, drainage and granular base and the Jackpine River structure from 41.8 miles west of Highway 129 westerly 10.5 miles.

Grading, drainage and granular base was completed on Highway 101 from the junction of secondary Highway 547 (road to Hawk Junction) southerly 7.86 miles including the Michipicoten River bridge.

Work of grading, drainage, granular base on Highway 101 from 7.86 miles south of the junction of Secondary Highway 547 easterly 7.97 miles was started. This is the last contract required to complete the highway from Wawa to Chapleau.

Work on Highway 17 north continued with construction being carried out on another section of grading, drainage, and hot mix paving from 8.82 miles north of Secondary Highway 563 northerly to Mica Bay. In addition, right of way clearing on Highway 17 was continued from 20 miles north of Highway 563 northerly to Montreal River.

Work of hot mix paving was completed on Highway 101 and 547 from Wawa to Hawk Junction.



Hwy. 108 — South of Elliot Lake, photo 7077 — (Sault Ste. Marie)

Grading, drainage, granular base and hot mix paving was started on Highway 101 from Chapleau easterly 14.61 miles.

Work of hot mix paving on Highway 129 from approximately 23 miles south of Chapleau (five mile creek) southerly 17.0 miles. Work was also started on Highway 129 from 1.5 miles south of Aubrey Falls southerly for 6.02 miles including a new structure on the Mississagi River.

Construction of Highway 614 was also started with a grading, drainage, and granular base contract from the town of Manitouwadge south limits southerly for 8.95 miles.

#### MAINTENANCE

Due to the heavy rainfall during summer season work projects priming and surface treating was cancelled. 1 new patrol opened from Chapleau west on Highway 101.

#### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
101	From Chapleau easterly.....	14.61	1965	3.36	9,650
101, 547	From Wawa easterly to secondary Hwy. 547 and from Hwy. 101 northerly to Hawk Jct.....	15.03	1965	15.03	28,994
29	From approx. 23 mi. south of Chapleau southerly....	17.00	1965	17.00	31,260
	TOTALS.....	46.64		35.39	69,904



Hwy. 101 — 5 miles south of Hwy. 547. photo 6866 — (Sault Ste. Marie)

### Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	MILES IN JOB	THIS FISCAL YEAR	
			MILES COMPL.	TONS PLACED
556	(a) Village of Searchmont.....	1.3	1.3	2,041
	(b) Jct. 552 northerly.....	1.3	1.3	2,041
548	From 2.5 mi. to 5.0 mi. south of Richards Landing.....	2.5	2.5	3,925
561	Bruce Mines northerly.....	1.5	1.5	2,355
	TOTALS.....	6.6	6.6	10,362

### Bituminous Prime on Gravel Roads

Work program cancelled due to adverse weather conditions.

### Bituminous Surface Treatment

Work program was cancelled due to adverse weather conditions.

### Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
101	Michipicoten River bridge.....	1964	1965	1965	Piles, concrete deck

### Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
17TC	From 8.82 mi. north of secondary Hwy. 563 northerly to Mica Bay.....	4.43	40,232
101	From Jct. secondary Hwy. 547 southerly including Michipicoten River bridge.....	7.86	53,876
101	From 30.8 mi. west of Hwy. 129 westerly.....	10.70	67,679
101	From 41.8 mi. west of Hwy. 129 westerly including Jackpine River bridge.....	0.42	3,477
101	From Chapleau easterly.....	13.15	75,600
101, 547	From Wawa easterly to secondary Hwy. 547 and from Hwy. 101 northerly to Hawk Jct.....	15.03	17,184
129	From approximately 23 mi. south of Chapleau southerly.....	17.00	63,745
	TOTALS.....	68.59	321,793

### Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
101	Shawmere River westerly at various locations.....	14.1	4,999
550	From the Jct. of secondary Hwy. 565 westerly at various locations.....	5.4	5,100
	TOTALS.....	19.5	10,099



Grading and Culverts

HWY. No.	LOCATION	MILES IN JOB (1)	YEAR BEGUN	MILES COMPL. PREV. YRS. (3)	MILES COMPL. THIS YR. (4)
17TC	From 8.82 mi. north of secondary Hwy. 563 northerly to Mica Bay.....	11.35	1964	—	8.17
101	From 30.8 mi. west of Hwy. 129 westerly.....	10.70	1964	4.81	5.89
101	From Jct. of secondary Hwy. 547 southerly.....	7.86	1964	3.06	4.80
101	From 41.8 mi. west of Hwy. 129 westerly.....	10.50	1965	—	5.46
101	From 7.86 mi. south of Jct. of Hwys. 101 and 547 easterly.....	7.97	1965	—	3.63
101	From Chapleau easterly.....	14.61	1965	—	13.29
101, 547	From Wawa easterly to secondary Hwy. 547 and from Hwy. 101 northerly to Hawk Jct.....	15.03	1965	—	15.03
129	From 1.5 mi. south of Aubrey Falls southerly for 6.02 mi. including connecting road to existing Hwy. 129 of 0.71 mi. and Mississagi River bridge at 2.9 mi. south of Aubrey Falls.....	6.73	1965	—	4.04
129	From approx. 23 mi. south of Chapleau southerly	17.00	1965	—	17.00
TOTALS.....		101.75		7.87	77.31

Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES TONS COMPL. PLACED	
17TC	From 8.82 mi. north of secondary Hwy. 563 northerly to Mica Bay.....	11.35	1964	—	4.54	91,465
101	From Jct. secondary Hwy. 547 southerly including Michipicoten River bridge....	7.86	1964	—	7.86	65,071
101	From 30.8 mi. west of Hwy. 129 westerly	10.70	1964	3.06	7.64	153,953
101	From 41.8 mi. west of Hwy. 129 westerly including Jackpine River bridge.....	10.50	1965	—	4.25	64,452
101	From Chapleau easterly.....	14.61	1965	—	14.61	83,630
101, 547	From Wawa easterly to secondary Hwy. 547 and from Hwy. 101 northerly to Hawk Jct.....	15.03	1965	—	15.03	6,594
129	1.5 mi. south of Aubrey Falls southerly 6.02 mi. and connecting road to 129 and Mississagi River bridge.....	6.73	1965	—	0.40	5,736
TOTALS.....		76.78		3.06	54.33	470,901

New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
29	Appleby patrol yard Hwy. 129 (not painted)	Frame	Salt shed	1965	1965
46	Iron bridge patrol yard.....	Frame	Salt shed	1965	1965
17	White River patrol yard.....	Metal	Garage	1964	1965
14	Manitouwadge patrol yard.....	Frame	Delco shed	1965	1965
29	Aubrey Falls two way radio tower.....	Frame	Delco shed	1965	1965
29	Camp 36.....	Frame	Delco shed	1965	1965
101	Budd Lake.....	Frame	Delco shed	1965	1965
17	Mica Bay patrol yard.....	Frame	Delco shed	1965	1965
101	Budd Lake.....	Frame	Storage shed	1965	1965
17	Mica Bay.....	Frame	Storage shed	1965	1965





Hwy. 129 — 20 miles south of Chapleau. photo 7094 — (Sault Ste. Marie)

### Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	3	—	—
Calcium dust layer on gravel roads.....(miles)	145.5	—	—
Off-road parks maintained.....	13	—	—
Roads snowploughed and kept open, King's highways.....	—	—	554
Roads snowploughed and kept open, secondary highways.....	—	—	239
Roadside picnic places maintained.....	36	—	—
Routine maintenance, King's highways.....	—	—	554
Routine maintenance, secondary highways.....	—	—	239
Salt for de-icing roads (raw).....(tons course)	—	12,794	—
Salt in sand, stockpiled.....(tons fine)	—	2,218	—
Sand for winter maintenance.....(cu. yds.)	12,412	—	—
Scale houses maintained.....	1	—	—
Seeding by department's forces.....(acres)	55	—	—
Shrubs received and planted this year.....(trees)	233	—	—
.....(doz. bulbs)	36	—	—
Signs erected or replaced.....	2,348	—	—
Snow fence erected, dismantled, stored.....	Information not readily available		
Weed control.....(gals.)	1,117	—	—
Zone painting on King's highways.....(gals., paint)	6,520.5	—	—
(Paint and Beads — applied separately).....(lbs., beads)	37,997.0	—	469.1
Zone painting on secondary highways.....(gals., paint)	1,091.5	—	—
(Paint and Beads — applied separately).....(lbs., beads)	6,402.0	—	77.1

DISTRICT No. 19 — FORT WILLIAM

V. A. Snell, P.Eng., District Engineer

CONSTRUCTION

Above average inclement weather during the construction season combined with inability to some degree of contractors to provide a sufficient labour force tended to reduce the quantity of work produced in 1965. However, several projects were completed that were worthy of special note.

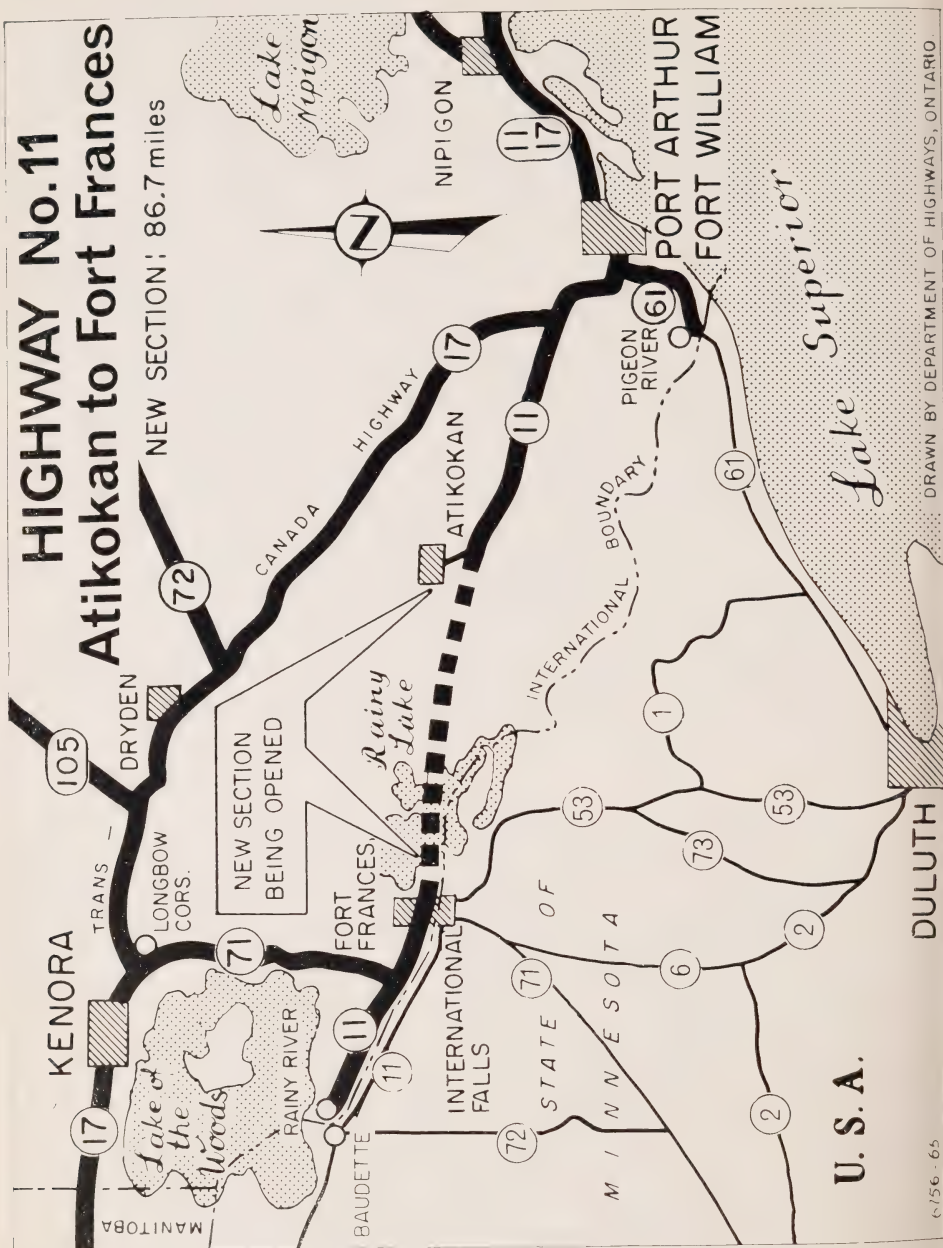
With the completion of the Seine River bridge, some 34 miles west of Atikokan, it was possible to open the Atikokan—Fort Frances Highway. On Monday, June 28, 1965, Highway 11, Atikokan to Fort Frances, was officially opened by the Honourable John Robarts, Q.C., Prime Minister of Ontario. At that time paving of the section of this Highway in district 19 was commenced and it was possible to pave some 23 miles of the total mileage of 34 during 1965.

Progress in reconstruction of Trans Canada Highway 17 between English River and Ignace was slower than anticipated. It was possible, however, to pave this section over half its length in this way partially reducing inconvenience to the travelling public over this inferior section of highway. Remedial measures were taken and completed using a resurfacing contract from the city of Port Arthur easterly limits easterly for some 10 miles. This section of Highway 17 and 11 is of an urban nature and carries all traffic entering and leaving the lakehead, and heavy traffic is realised during the summer tourist season. It is expected that this section will serve its purpose until the diversion of heavy traffic onto the proposed Lakehead Expressway some 5 years distant at which time heavy traffic will use the new route.



Hwy. 599 — Bridge over Crystal River. photo 7117 — (Fort William)





The year, 1965, saw the completion of an important phase in the construction of secondary Highway 599 between Ignace, Valora, Savant Lake, Central Patricia north. With the completion of the structure over the English River, and completion of grading near Ignace, and the provision of some 34 miles of crushed gravel surface, it became possible to travel north from Ignace to Valora (34 miles) over an excellent gravel road. Formerly, this journey was made in some 2 hours over an industrial road. With the new road, a time saving of  $1\frac{1}{2}$  hours is realized. From Central Patricia some 37 miles of crushed gravel was placed, substantially extending travel beyond the most northerly extremity of the provincial road system. Reconstruction of a section of this highway between Savant Lake and Central Patricia involved the construction of 3 substantial concrete bridges eliminating several hazardous Bailey structures and poor horizontal alignment.

In 1965 a serious shortage of inspection staff was apparent. This situation was partly alleviated since some contractors were experiencing difficulties in obtaining experienced staff which restricted their scope of operations.

#### MAINTENANCE

The completion of the radio system at the beginning of July has improved operations in the Fort William district. The radio is one of the most modern communication systems used by the Department of Highway. Problems in the use of this system were encountered at first, but by years end efficiency had reached a very high level. During the winter 86,100 tons of granular 'B' was placed on secondary Highway's 590, 589 and 591 to continue the up-grading of secondary roads throughout the district. 2 new patrol garages at Atikokan and Ignace were started late in the fall.



Hwy. 17 — 12 miles east of Nipigon. photo 6853 — (Fort William)



The department crusher produced 53,750 tons of material, placed in stockpile, and is to be placed on the sections of Highways on which granular base was laid during the winter.

Routine maintenance was carried out on Highway's and secondary roads in the district.

### Automatic Signals at Railway Crossings

HWY. No.	RAILWAY	LOCATION	TYPE OF SIGNAL
599	C.P.R.	0.5 mi. from Jct. Hwy. 17 in the township of Ignace, on Secondary Hwy. 599.....	Flashing lights with short arm gates.

### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11	Atikokan cut-off to Seine River westerly.....	34.06	1965	—	23.00	34,069
17TC	English River westerly 11.9 mi.....	11.91	1964	5.20	6.71	10,463
17TC	11.2 mi. west of English River westerly 13.5 mi.....	5.30	1965	—	5.30	8,240
628	Hwy. 17 to Red Rock, 4.38 mi.....	—	—	—	—	—
Lake- head Express- way	Edward Street to Jct. Hwy. 130, 2.74 mi.....	1.10	1965	—	1.10	916
TOTALS.....		52.37		5.20	36.11	53,588

### Bituminous Prime on Gravel Roads

HWY. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
11A	Jct. Hwy. 11 and Hwy. 17 .15 mi. east.....	15.0	30,615	2,267
585	Pine Portage to 9.8 mi. southerly.....	9.8	14,446	1,138
587	Jct. Hwy. 11 and Hwy. 17 to Silver Islet.....	24.0	40,902	2,982
588	Jct. at Hymers and Nolalu.....	1.6	3,300	198
589	Jct. Hwy. 11A and Hwy. 17A, 19 mi. north.....	19.0	29,781	2,235
590	Jct. Hwy. 130 to Hwy. 11 and 17.....	11.0	18,220	1,447
595	Jct. Hwy. 608 to Hwy. 590.....	11.6	30,873	1,405
608	Jct. Hwy. 595 to 0.3 mi. south.....	0.3	2,200	96
802	Jct. Hwy. 11 to Coldstream Mines.....	7.0	21,024	936
TOTALS.....		99.3	191,361	12,704

Bituminous Resurfacing of Old Pavement

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11, 17TC	Port Arthur city limits easterly, 10.3 mi.....	10.3	26,087

Bridges Built

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
11	Seine River. Indian Reserve No. 23.....	1964	1965	1965	Steel beam, concrete deck
599	Albany River structure. Osnaburgh Indian Reserve No. 63B.....	1965	1965	1965	Steel beam, concrete deck
599	Albany River main channel structure. Osnaburgh Indian Reserve No. 63B.....	1965	1965	1965	Steel beam, concrete deck
599	Albany River overflow structure. Osa- burgh Indian Reserve No. 63B.....	1965	1965	1965	Concrete rigid frame (slab)
599	English River. Unsurveyed territory.....	1964	1965	1965	Steel beam, concrete deck
599	Crystal River. Unsurveyed territory.....	1965	1965	1965	Timber pile, steel beam, concrete deck
599	Mud River (Badesdawa). Unsurveyed territory.....	1965	1965	1965	Pile timber deck

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	23.90 mi. to 34.00 mi. west of Atikokan.....	0.30	4,358.55
11	Atikokan cut-off to Seine River.....	23.00	53,149.63
11, 17	Port Arthur city limits easterly 10.30 mi.....	10.30	32,903.94
17TC	11.20 mi. west of English River westerly 13.5 mi.....	13.00	9,137.16
17TC	English River westerly 11.9 mi.....	6.71	3,726.21
17TC	23.6 mi. west of English River to Ignace.....	—	470.00
599	Albany River structure.....	1.29	1,128.57
	Albany River main channel structure.....	—	2,070.45
	Albany River overflow structure.....	—	5,029.00
628	From Hwy. 17 to Red Rock, 4.38 mi.....	3.00	31,749.00
	Edward Street to Jct. Hwy. 130.....	1.00	6,858.72
TOTALS.....		58.60	150,581.23

## Crushed Gravel and Stone on Roads by Department's Forces

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
17TC	Jct. Hwy. 11 and Hwy. 17 to Ignace.....	108	2,550
17TC	Port Coldwell to Nipigon.....	105	870
11,			
17TC	Nipigon to Fort William.....	76	1,600
11,			
17TC	Fort William to Jct. Hwy. 11 and Hwy. 17.....	40	1,450
11	Longlac to Nipigon.....	123	4,750
11	Jct. Hwy. 11 and Hwy. 17 to Atikokan.....	88	1,650
11A,			
17A	Port Arthur to Jct. Hwy. 11 and Hwy. 17.....	21	1,300
61	Fort William to international boundary.....	42	1,225
588	Jct. Hwy. 11 and Hwy. 17 to end of highway.....	34	4,200
593	6 mi. south of Jct. 588 southerly for 6 mi.....	6	5,630
599	Valora to Savant Lake.....	50	2,370
TOTALS.....		693	27,595

## Grading and Culverts

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	MILES COMPL.
				PREVIOUS YEARS	THIS YEAR
11	23.90 mi. to 34.00 mi. west of Atikokan.....	10.10	1963	9.80	0.30
17TC	11.2 mi. west of English River westerly 13.5 mi.....	13.52	1964	1.50	6.00
17TC	23.6 mi. west of English River to Ignace.....	11.10	1965	—	—
628	From Hwy. 17 to Red Rock 4.38 mi.....	4.38	1965	—	3.00
Lakehead Express- way	Edward Street to Jct. Secondary Hwy. 130, 2.74 mi.*.....	2.74	1965	—	1.00
599	Approaches to, structure, main channel struc- ture, and overflow structure (Albany River), 88 mi. north of Savant Lake.....	1.29	1965	—	1.29
	* 1.00 mi. of grading only.				
TOTALS.....		43.13		9.80	11.59

## Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	THIS FISCAL YEAR	
				PREVIOUS YEARS	MILES COMPL.	TONS PLACED
11	From 23.9 mi. to 34.0 mi. west of Atikokan.....	10.10	1963	9.7	0.4	112,182
17TC	From 11.2 mi. west of English River westerly 13.5 mi.....	13.52	1964	—	6.00	109,300
17TC	From 23.6 mi. west of English River to Ignace.....	11.10	1965	—	—	—
628	Hwy. 17 to Red Rock, 4.38 mi.....	4.38	1965	—	3.00	100,220
599	Approaches to Albany River, 88 mi. north of Savant Lake.....	1.29	1964	—	1.29	14,677
TOTALS.....		40.39		9.7	10.69	336,379

## Granular Base Laid Where No Grading Was Done

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
				PREVIOUS YEAR		
89	Jct. Hwy. 591 northerly 5 mi.....	5	1965	—	5	24,385
91	Jct. Hwy. 589 northerly 5 mi.....	5	1965	—	5	22,386
90	2 mi. west of Jct. Hwy. 17 and Hwy. 590 southerly 8 mi.....	8	1965	—	8	39,329
	TOTALS.....	18			18	86,100

## New Buildings

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	TYPE OF BUILDING	PURPOSE OF BUILDING
11TC, 17W	Lot 20, Concession D, Paipoonge Town- ship (Kakabeka Falls).....	1964	1965	Standard salt shed	Salt storage
11TC, 17E	Lots 5 and 6, Concession 3, McTavish Township (Pearl).....	1965	1965	Standard salt shed	Salt storage
	Walsh and Mountain Avenue, in city of Fort William.....	1965	1966	District garage	Repair garage



Hwy. 11 — Seine River Bridge. photo 8769-A — (Fort William)



**Totals of Other Work Done on District No. 19  
During Past Fiscal Year**

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	3	—	—
Calcium dust layer on gravel roads.....	—	790	175
Off-road parks maintained.....	19	—	—
Roads snowploughed and kept open, King's highways.....	—	—	632
Roads snowploughed and kept open, secondary highways.....	—	—	540
Roadside picnic places maintained.....	20	—	—
Routine maintenance, King's highways.....	—	—	632
Routine maintenance, secondary highways.....	—	—	509
Salt for de-icing roads.....(raw)	—	7,650	—
Salt in sand, stockpiled.....	—	1,500	—
Sand for winter maintenance.....	—	19,770	—
Scale houses maintained.....	2	—	—
Seeding by department's forces.....(acres)	130	—	—
Signs erected or replaced.....	3,123	—	—
Snow fence erected, dismantled, stored.....	—	—	20
Weed control.....	—	—	884
Zone painting on King's highways.....(gals.)	7,544	—	590.9
Zone painting on secondary highways.....(gals.)	431	—	32.8

**DISTRICT No. 20 — KENORA**

**R. Robertson, P.Eng., District Engineer**

**CONSTRUCTION**

On Highway 11 all grading and granular base was completed from the Seine River easterly by early summer, with the official opening taking place on June 28, 1965. The completion of this section provided a direct route from Fort Frances to the Lakehead. A contract for the work of granular base and hot mix paving on Highway from Emo to Barwick was started with work to be complete in 1966.

At Kenora grading and granular base was completed on the Trans-Canada Highway 7 from the town limits easterly 5.27 miles. The work of placing hot mix pavement on this section of highway, was 60 per cent complete by winter and will be finished in the spring of 1966. As a part of this paving contract approximately 10 miles of crushed pavement on Highway 17, at various locations from 10 miles west of Keewatin to the Ontario-Manitoba boundary, was resurfaced with a 3/4 inch depth of hot mix sand asphalt.

On Highway 105 two hot mix paving contracts were completed with the highway now reconstructed and paved to 27 miles south of Ear Falls. The remaining 36 miles of Highway 105 from 27 miles south of Ear Falls to the junction of Highway 17 at Vermilion Bay, is being reconstructed under four contracts with work virtually complete on 10 miles, well underway on 16 and just underway on the remaining 10 miles.

On Highway 72 two grading and granular base contracts were awarded. Work on the first 12.8 miles from the junction of Highway 17 northerly was progressing well with work on the next 13 miles northerly just underway at the beginning of winter.

From Nestor Falls southerly 8.3 miles on Highway 71, the work of grading and granular base was approximately 40 per cent complete. Construction work was generally slowed throughout the district by poor weather.

**MAINTENANCE**

Day labour forces throughout the district completed grading, drainage and granular base work on approximately 28 miles of secondary Highways 594, 601, 602, 605 and 613. Six miles of Highway 596 and 641 were reprimed. Priming was completed on 10 miles of Highway 602, 3 miles of Highway 603 and 4 miles of Highway 613. Surface treatment was carried out on 6 miles of Highway 128, 31 miles of Highways 596 and 613, 6 miles of Highway 600, 13 miles of Highway 602 and 32.5 miles of Highway 621. All priming and surface treatment was done by district forces.

Our crushing plant operated in Fort William and Kenora districts, producing 10,000 tons of crushed gravel with 48,300 tons being crushed in this district.

Salt sheds were constructed by day labour at the following locations: One at Rozier, one at Bergland, one at Finland, one at Minaki, two at Jaffray and one at Pickle Lake. Work on landscaping the district garage was also started. Day labour forces carried out seeding operations on Highway 17 from Keewatin westerly for 10 miles and on Highway 11 from Bears Pass easterly to the Seine River for 39 miles.

Zone painting was completed over 442 miles of highways. Weed and brush spraying was carried out at various locations throughout the district.

Our winter works projects consisted of clearing and brushing right-of-way in three locations.

A permanent glancing boom structure was installed north of the high level bridge at the Noden Causeway by district forces.

Seventeen 48 inches diameter steel drums, each 40 feet in length, were positioned and anchored by chain through 35 feet of water to a row of concrete anchor blocks on the lake bottom. The underwater attachments were carried out by qualified divers.

Day labour and patrol crews did maintenance painting on hand rails and beams on three bridges throughout the district. On Highway 128, the Black Sturgeon River bridge was reinforced with a 60 foot D. S. Bailey and on Highway 659, the Rice Creek bridge was replaced with a 120 foot S. S. Bailey using district forces. The substructure to the LaVallee River bridge on Highway 602 was completed. Repairs were also carried out on the Moose Creek bridge, Highway 605 and the Beaver Creek bridge, Highway 594.



Hwy. 72 — 2 miles north of Dinorwic. photo 7072 — (Kenora)

### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREVIOUS YEAR	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
7TC	From Kenora town limits east for 5.27 mi. Hot mix paving, patching and resurfacing east and west of town of Kenora for 11.88 mi. Total of 17.15 mi.....	13.00	1965	—	7.73 5.27	6,159 8,585
7TC	From east entrance of Keewatin westerly 10.17 mi. and from jct. of Parsons Street (Kenora) easterly 0.5 mi. plus work on Cameron Bay bridge.....	11.56	1964	9.60	1.96	6,739
5	From approximately 12 mi. south of Ear Falls southerly for 15.25 mi.....	15.25	1965	—	15.25	28,711
5	From 12.12 mi. south of Ear Falls northerly 20.44 mi. (including padding 14.4 and 14.7 mi. north of Ear Falls and paving deck of Trout River bridge 18.3 mi. north of Ear Falls) 20.63 mi.....	20.63	1964	12.10	8.53	8,957
	TOTALS.....	60.44		21.70	38.74	59,230

### Bituminous Mulch, Cold Mix Patch and Resurfacing

HWY. No.	LOCATION	MILES IN JOB	MILES COMPL. PREVIOUS YEAR	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
1	Rainy River easterly to Seine River bridge.....	113.70	—	113.70	153.00
7TC	Ontario-Manitoba boundary easterly to Ignace	184.80	—	184.80	343.50
1Jct.	Hwy. 17 (at Longbow Corners) southerly to junction with Hwy. 11.....	96.60	—	96.60	499.50
2	Jct. Hwy. 17 at Dinorwic northerly to Sioux Lookout.....	43.00	—	43.00	52.50
5	Jct. Hwy. 17 at Vermilion Bay northerly to Red Lake.....	108.90	—	108.90	216.00
5	Jct. Hwy. 105 northerly to Cochenour Dock....	8.50	—	8.50	3.00
8	Kenora (north limits) northerly to Redditt....	17.80	—	17.80	186.00
	SECONDARY HIGHWAYS				
6	Keewatin (north limits) north-westerly to Minaki.....	29.60	—	29.60	531.75
8	Jct. Hwy. 128 (easterly) to Jct. Secondary Hwy. 604.....	2.80	—	2.80	244.50
0	Rainy River north-easterly to Jct. with Hwy. 71.....	59.00	—	59.00	129.00
1	Jct. Hwy. 17 (east leg) to Jct. Hwy. 17 (west leg).....	16.10	—	16.10	15.00
2	Emo to Fort Frances (south of Hwy. 11).....	30.80	—	30.80	97.50
4	Kenora (east limits) north-easterly to the Kenora airport.....	5.20	—	5.20	27.00
3	Jct. Hwy. 602 to Lake Despair.....	25.50	—	25.50	24.00
1	Jct. Hwy. 11 (at Sleeman) northerly to the "Lake of the Woods".....	32.90	—	32.90	547.50
1	Jct. Hwy. 17 northerly to Jct. Secondary Hwy. 596.....	8.40	—	8.40	273.75
	TOTALS.....	783.60	—	783.60	3,343.50



### Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS SAND USED
596	From Jct. Hwy. 641 north-westerly to Minaki (in sections)	1.30	3,800	135
602	From 10 mi. west of Fort Frances to 15 mi. west	6.30	20,200	816
603	From Jct. Hwy. 17 to Dymont (3 mi.)	2.80	8,460	450
613	From Jct. Hwy. 11 north for 4 mi.	3.40	10,200	510
641	From Jct. Hwy. 17 northwest to Jct. Hwy. 596 (in sections)	4.10	12,100	428
TOTALS		17.90	54,760	2,339

### Bituminous Surface Treatment

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS CHIPS USED
128	From Kenora north 6 mi.	5.20	19,200	750
596	From Jct. Hwy. 641 northerly to Minaki	19.50	67,850	2,566
600	Hwy. 600 Jct with Hwy. 11 north for 6 mi.	6.00	18,944	773
602	Fort Frances west limits to 15 mi. west	12.20	48,015	1,935
621	Hwy. 621 Jct. with Hwy. 11 to end of road, 32.5 mi.	32.50	118,400	4,591
641	From Jct. Hwy. 17 northwesterly to Jct. Hwy. 596	1.95	8,100	278
TOTALS		77.35	280,509	10,893

### Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	From 60.00 mi. west to 72.43 mi. west of Atikokan (12.43 mi.)	6.43	100,041
11	From 34.00 mi. west of Atikokan to 48.42 mi. west (14.42 mi.)	.58	47,503
11	From 22.83 mi. east of Rainy Lake Causeway easterly for 11.84 mi.	.84	32,920
11	From Jct. Hwy. 602 westerly to Barwick 7.25 mi.	—	1,892
17TC	From east entrance of Keewatin westerly for 10.17 mi. and from Jct. Parsons Street (Kenora) easterly 0.5 mi. plus work on Cameron Bay bridge and approaches and padding east and west of these areas (11.56 mi.)	1.96	16,039
17TC	Kenora east town limits easterly for 5.27 mi.	1.27	46,175
71	From Nestor Falls southerly 8.34 mi.	2.25	23,373
71	From Emo westerly to Barwick for 7.25 mi. and approaches to Pine-wood River bridge	—	17,700
72	Approaches to C.N.R. subway at Sioux Lookout	—	2,998
72	From the Jct. Hwy. 17 northerly for 12.84 mi.	2.05	44,135
105	From 12.12 mi. south of Ear Falls northerly 20.44 mi. and Trout River bridge deck (20.63 mi.)	8.46	14,867
105	From Hwy. 17 northerly for 8.19 mi.	3.27	29,369
105	From 8.6 mi. north of Hwy. 17 northerly for 8.1 mi.	1.46	37,535
105	From 27.3 mi. south of Ear Falls southerly for 10.05 mi.	9.55	99,680
105	From approximately 12 mi. south of Ear Falls southerly for 15.25 mi.	15.25	30,340
594	(Various locations)—Dryden westerly to Eagle River	21.50	14,502
TOTALS		74.87	559,069

## Crushed Gravel and Stone on Roads by Department's Forces

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
1	Rainy River easterly to Seine River bridge.....	113.70	134.25
7TC	Ontario-Manitoba boundary to west limits of Ignace.....	184.80	8,158.50
1	Jct. Hwy. 17 (Longbow Corners) southerly to Jct. Hwy. 11.....	96.80	1,198.50
2	Jct. Hwy. 17 at Dinorwic northerly to Sioux Lookout.....	43.00	1,192.50
5	Jct. Hwy. 17 at Vermilion Bay northerly to Red Lake.....	108.90	1,581.00
6	From Jct. Hwy. 72 (Patricia Corners) westerly to Hudson.....	10.00	102.00
9	From Jct. Hwy. 17 northerly to Richan.....	13.00	223.50
5	Jct. Hwy. 105 northerly to Cochenour.....	8.50	12.00
8	Kenora north limits northerly to Redditt.....	17.80	1,141.50
4	From Jct. Hwy. 17 easterly (south of Hwy. 17 to Dryden).....	21.50	1,314.00
6	Keewatin (north limits) north-westerly to Minaki.....	29.60	4,174.50
8	Jct. Hwy. 128 (easterly) to Jct. Secondary Hwy. 604.....	2.80	99.00
0	Rainy River north-easterly to Jct. Hwy. 71.....	59.00	6,730.50
1	Jct. Hwy. 17 (east leg to Jct. Hwy. 17 (west leg)).....	16.10	202.50
2	Jct. Hwy. 613 to Emo.....	14.20	7,053.00
3	From Jct. Hwy. 17 at Borups Corners to Dymont.....	2.80	2,121.00
4	Kenora (east limits) north-easterly to the Kenora airport.....	5.20	90.00
5	Jct. Hwy. 17 to end of road.....	7.70	30.00
9	Jct. Hwy. 105 to Clay Lake.....	9.80	945.00
1	Jct. Hwy. 602 northerly to end of road.....	12.50	1,299.00
3	Jct. Hwy. 602 northerly to Lake Despair.....	25.50	18,118.00
5	Jct. Hwy. 71 north-easterly to Clearwater Lake.....	12.50	1,144.50
7	From Jct. Hwy. 11 at Stratton to Jct. Hwy. 600.....	14.40	885.00
8	Jct. Hwy. 105 to the Starratt Olson mine.....	7.20	19.50
9	Jct. Hwy. 11 at Pinewood northerly to Jct. Hwy. 621.....	25.50	454.50
1	Jct. Hwy. 11 (Sleeman) northerly to the Lake of the Woods.....	32.90	1,846.50
1	Jct. Hwy. 17 northerly to Jct. Secondary Hwy. 596.....	8.40	4,572.00
2	From First Street Sioux Lookout to Alcona.....	11.50	163.50
7	Jct. Hwy. 17 north-westerly to Blue Lake.....	5.30	249.00
9	Jct. Hwy. 604 north-westerly to Hwy. 128.....	11.30	318.00
4	Jct. Hwy. 105 to the Manitou Falls Dam.....	13.20	37.50
TOTALS.....		945.40	65,610.25



wy. 11 - Noden Causeway over Rainy Lake. photo 6857 - (Kenora)

## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEAR	MILES COMPL. THIS YEAR
11	From 34 mi. west of Atikokan to 48.42 mi. west, 14.42 mi.....	14.42	1963	13.84	.58
11	From 22.83 mi. east of Rainy Lake causeway easterly for 11.84 mi.....	11.84	1963	11.00	.84
11	From Jct. Hwy. 602 westerly to Barwick 7.25 mi.....	7.25	1965	—	—
17TC	Kenora east town limits easterly for 5.27 mi....	5.27	1964	4.00	1.27
71	From Nestor Falls southerly for 8.34 mi.....	8.34	1965	—	2.25
71	From Emo westerly to Barwick for 7.25 mi. and approaches at Pinewood River bridge	7.71	1965	—	—
72	From Jct. Hwy. 17 northerly for 12.84 mi.....	12.84	1965	—	9.00
105	From Hwy. 17 northerly for 8.19 mi.....	8.19	1965	—	7.24
105	From 8.6 mi. north of Hwy. 17 northerly for 8.1 mi.....	8.10	1965	—	3.00
105	From 27.3 mi. south of Ear Falls southerly for 10.05 mi.....	10.05	1965	—	10.05
105	From 16.16 mi. north of Hwy. 17 northerly for 9.55 mi.....	9.55	1965	—	.50
TOTALS.....		103.56		28.84	34.73

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEAR	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11	From 60 mi. to 72.43 mi. west of Atikokan.....	12.43	1964	6.00	6.43	151,292
11	From 34 mi. west of Atikokan to 48.42 mi. west.....	14.42	1963	13.84	.58	47,503
11	From 22.83 mi. east of Rainy Lake causeway easterly 11.84 mi.....	11.84	1963	11.00	.84	36,364
17TC	From east entrance of Keewatin westerly for 10.17 mi.....	10.17	1964	7.46	2.71	14,163
17TC	Kenora east limits easterly for 5.27 mi.....	5.27	1964	4.00	1.27	134,146
71	From Nestor Falls southerly for 8.34 mi.....	8.34	1965	—	2.25	141,175
71	From Emo westerly to Barwick 7.25 mi. and paving at Pinewood River bridge and approaches 16.5 mi. west of Barwick.....	7.71	1965	—	—	60,508
72	Approaches to C.N.R. subway at Sioux Lookout.....	—	1965	—	—	10,398
72	From Jct. Hwy. 17 northerly for 12.84 mi.....	12.84	1965	—	2.05	328,782
105	From 12.12 mi. south of Ear Falls northerly for 20.63 mi.....	20.63	1964	12.17	8.46	14,405
105	From Hwy. 17 northerly for 8.19 mi.....	8.19	1965	—	3.27	270,084
105	From 8.6 mi. north of Hwy. 17 northerly for 8.1 mi.....	8.10	1965	—	1.46	86,160
105	From 27.3 mi. south of Ear Falls southerly for 10.05 mi.....	10.05	1965	—	9.55	482,945
105	From 12 mi. south of Ear Falls southerly for 15.25 mi.....	15.25	1965	—	15.25	30,340
TOTALS.....		145.24		54.47	54.12	1,808,265

### Granular Base Where No Grading Done

WY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEAR	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
1	(West side of loop) Jct. Hwy. 17					
	north for 7 mi.....	7.00	1965	—	6.00	52,500
2	3 mi. east of Big Fork westerly for					
	5 mi.....	5.00	1964	3.00	2.00	17,712
2	3 mi. west of Big Fork to 8 mi. west	5.00	1965	—	4.00	26,795
3	Borups Corners to Dymert for					
	2.80 mi.....	2.80	1965	—	2.80	5,856
5	From Jct. Hwy. 17 to end of road	7.50	1965	—	7.50	38,220
3	Mile 4 to Mile 9 north of Hwy. 11	5.00	1965	—	5.00	19,167
7	From Stratton to Jct. Hwy. 600.....	14.00	1965	—	14.00	6,045
2	From Sioux Lookout north-easterly to Alcona.....	11.00	1965	—	7.00	11,350
	TOTALS.....	57.30		3.00	48.30	177,645

### New Buildings

WY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	YEAR COMPL.
	Crozier yard approximately 4 mi. west of town of Fort Frances.....	One standard salt shed	Salt storage	1965	1966
	Nickel Lake patrol yard approximate- ly 15 mi. east of town of Fort Frances.....	One standard salt shed	Salt storage	1965	1966
	Finland yard at Jct. Hwy. 71 with Hwy. 600.....	One standard salt shed	Salt storage	1965	1966
	Jaffray patrol yard, approximately 6 mi. north of north limits of town of Kenora.....	One standard salt shed	Salt storage	1965	1966
	Jaffray patrol yard, approximately 6 mi. north of north limits of town of Kenora.....	One standard salt shed	Heated storage	1965	1966
	Minaki yards, approximately 1 mi. south-west of townsite of Minaki near Pistol Lake.....	One standard salt shed	Salt storage	1965	1966
	Bergland yard, approximately 2 mi. north of the Jct. Hwys. 600 and 621	One standard salt shed	Salt storage	1965	1966





Hwy. 105 - At Perrault Falls. photo 7058 - (Kenora)

### Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	3	—	—
Calcium dust layer on gravel roads.....	—	1,933	—
Calcium for de-icing roads.....	—	22	—
Development roads built (Dilke/Morley/Nelles Twps. 7 mi.).....	1	—	4.00
Off-road parks maintained.....	21	—	—
Roads snowploughed and kept open, King's highways.....	9	—	599.70
Roads snowploughed and kept open, secondary highways.....	22	—	366.90
Roadside picnic places maintained.....	11	—	—
Routine maintenance, King's highways.....	9	—	599.70
Routine maintenance, secondary highways.....	22	—	366.90
Salt for de-icing roads.....(raw)	—	3,072	—
Salt in sand, stockpiled.....	—	1,551	—
Sand for winter maintenance.....	—	24,586	—
Scale houses maintained.....	5	—	—
Seeding by department's forces.....(acres)	510	—	—
Signs erected or replaced.....	3,631	—	—
Snow fence erected, dismantled, stored.....	—	—	18.64
Weed control: Weed killer.....(gals.)	957	—	542.00
Sodium T.C.A.....(lbs.)	475	—	—
Zone painting on King's highways.....(gals.)	8,550	—	507.60
Zone painting on secondary highways.....(gals.)	18	—	7.40

## PERSONNEL BRANCH

### J. Pogue, Director

The Personnel Branch administers recruitment and placement of staff, staff transfers and promotions, training, organization and classification, personnel records, staff establishment of branches, the departmental safety program and the Public Service Superannuation Act. It is the branch responsible for the administration of the Public Service Act and Regulations, within the department.

The branch publishes a personnel manual, supplied to the supervisor of each major unit of organization, containing information on both Department of Civil Service and Department of Highways procedures. An accompanying manual, also published by the Personnel Branch, contains all published class specifications utilized by the Department.

These publications are augmented as the need arises by circulars, published over the signature of the Deputy Minister, detailing such matters as new salary rates, changes in personnel procedure or policies and other matters of related supervisory and employee interest. These circulars are widely distributed to both major and minor organizational units for display on bulletin boards, so that employees may be made aware of all new developments as soon as possible.

All employee grievances made under the Public Service Grievance Procedure are reported by supervisors to the Personnel Branch, to ensure that prompt action may be taken where necessary.

Should the grievance reach the stage of a hearing before the Public Service Grievance Board or before the Classification Rating Committee designated by the Chairman of the Civil Service Commission, the departmental viewpoint is presented by a member of the Personnel Branch staff.

## RECRUITMENT SECTION

During the period April 1, 1965 to March 31, 1966 employment requirements remained high and with the demand for suitable employees in all sectors of the economy, the Recruitment Section engaged in a program of contacts with High Schools as well as continuing contacts with Universities and advertising in the press.

A total of 1,202 new employees were hired into established positions with 642 hired through the central recruiting office in Downsview and 560 through the eighteen district offices. In addition, 856 students were taken on for temporary employment. Eleven promotions were effected as the result of Departmental competitions and a number of transfers effected as a result of personal counselling. In addition to recruitment conducted locally 26 persons (23 Civil Engineers) were hired as a result of recruitment activities in the United Kingdom.

## RECORDS SECTION

The Records Section is responsible for the proper documentation, recording and filing of all employee transactions and for ensuring that prescribed procedures are followed in all transactions.

The Section is also responsible for maintaining employee anniversary merit increase dates, from which eligibility for merit increases for all employees of the Department is determined. In addition to being responsible for maintaining these records on punched cards, this Section prepares Merit Increase lists for certification by the Deputy Minister, authorizing salary increases. It is also required to prepare lists for signature by the Deputy Minister for salary increases occasioned by Salary Schedule Amendments which have been authorized by Order-in-Council and published by the Department of Civil Service.

All inquiries concerning benefits under The Public Service Superannuation Act are referred to this Section, as are questions connected with attendance and vacation credits.

The position inventory for the entire Department is maintained by this Section, being documented on the personnel files and on punched cards. This amounted to approximately 25,280 transactions in addition to those mentioned below.

At the end of the fiscal year the Department's work force was 13,364 which was distributed as follows:

	1965-66	1964-65	1963-64
Deputy Minister's and Administration Branch.....	213	296	302
Financial Comptrollers' Branch.....	307	291	279
Services Branch.....	1,188	1,160	1,191
Planning Branch.....	370	356	350
Design Branch.....	733	750	744
Operations Branch.....	10,363	10,148	9,830
Personnel Branch.....	62	55	58
*Legal Branch.....	24	24	.....
**Electronic Computing Branch.....	91	.....	.....
***Research Branch.....	13	.....	.....
TOTALS.....	13,364	13,080	12,754

\*This figure was formerly included in Deputy Minister's and Administration Branch.

\*\*This figure was formerly included in Deputy Minister's and Administration Branch.

\*\*\*This figure was formerly included in Operations Branch.

The total work force of 13,364 included salaried and hourly-rated personnel and is grouped as follows:

	1965-66	1964-65	1963-64
Regular and Probationary Staff.....	9,116	8,735	7,860
Monthly Unclassified Staff.....	1,034	733	1,540
Seasonal Unclassified Staff.....	3,214	.....	.....
*Hourly-rated Unclassified Staff.....	.....	562	765
*Seasonal Staff (monthly and hourly).....	.....	3,050	2,589
TOTALS.....	13,364	13,080	12,754

\*These figures are now included in Seasonal Unclassified Staff.

By occupation the employees are grouped as follows:

	1965-66	1964-65	1963-64
Clerical and stenographers.....	2,148	2,055	2,020
Graduate engineers.....	350	359	374
Engineer's Assistants.....	2,346	2,173	2,300
Draftsmen.....	618	611	607
Others.....	1,385	1,364	1,312



Equipment operators.....	2,782	2,828	2,748
Automotive mechanics and foremen.....	458	457	457
Skilled labour.....	631	585	640
Unskilled labour.....	2,646	2,648	2,296
TOTALS.....	13,364	13,080	12,754

During the year 40,366 personnel transactions were carried out by the Personnel Branch as follows:

*New Appointments.....	9,015
Terminations.....	8,734
**Salary and other changes.....	22,617

\*This figure includes 6,258 seasonal help and 1,092 summer students.

\*\*This figure includes general salary revisions to most classes used by the Department.

ORGANIZATION AND CLASSIFICATION SECTION

This section is responsible for the administration, throughout the Department, of the classification and salary plan established by the Department of Civil Service. It is responsible for the development and administration of a similar departmental program governing the unclassified employees, who are not subject to the Public Service Act.

It is also responsible for the program of appointments to the regular staff of probationary and unclassified employees.

The section also provides, through its regional and branch representatives, advice and guidance to both supervisors and employees on a wide range of matters, such as interpretation of the Public Service Act and Regulations and the provision of counselling to individual employees where their problems are of such a nature that their supervisors are unable to assist them.

The regional representatives are also responsible for conducting safety inspections of premises and of field operations being carried out by Department employees.

The programme initiated under the Ontario Civil Service Reclassification Plan was continued, and the branch and regional personnel representatives continued to provide advice and guidance to supervisors in the field of position specification writing. The usual organizational changes, which occur in a department of this size, necessitated the review and re-writing of many position specifications and the re-drawing of a number of organizational charts.

The personnel representatives also conducted desk audits of a number of positions, where the responsible supervisor or the incumbent of the position had expressed doubts concerning the correctness of the class to which the position had been assigned, in order to ensure that a factual description had been submitted to the Department of Civil Service for classification allocation.

In conjunction with the Department of Civil Service a review was made of the duties performed by employees in the Engineer's Assistant class series and, as a result, 11 new class series have been established, the positions of some 1,600 employees were reclassified and appropriate class and salary adjustments were processed. This review continues.



A similar review was conducted in respect of positions involving accounting responsibilities and this resulted in the establishment of a new Departmental Accountant class series. The positions of over 170 employees were reclassified from the Clerk, General series and appropriate class and salary adjustments were processed.

The apprenticeship system within the Department was extended to include Equipment Spray Painter Apprentices. A number of employees are now registered in the trade and classified accordingly.

Revised regulations under the Public Service Act extended certain benefits to employees on the Unclassified Staff and resulted in numerous appointments of employees to Group 3 of the Unclassified Staff.

Other classifications were established by the Civil Service Commission during the period under review, such as Librarians and Library Assistants, Regional Services Manager, which necessitated the reclassification of a number of employees, and the processing of a large number of salary revisions for employees in other classes for which new salary ranges were established.

Other re-organization within the Department brought the usual new or revised position specifications and organization charts in its train, necessitating the allocation or re-allocation of numerous positions to appropriate classes.

The usual large volume of merit increases of salary, promotions, demotions and other related transactions were processed.

## TRAINING SECTION

This section is responsible for establishing and administering a program of training to maintain and improve the efficiency of department operations.

Training courses were held at the Training Centre at Downsview during the fall and winter months when the reduced construction program enabled employees to attend.

Courses were conducted as follows:

BRANCH	NUMBER OF COURSES		NUMBER OF CANDIDATES ATTENDING	
	1964-65	1965-66	1964-65	1965-66
Services.....	39	26	274	231
Operations.....	26	33	605	674
Planning.....	3	3	13	12
Design.....	10	8	150	74
Administration.....	0	3	0	35
Electronic Computing.....	0	5	0	59
Personnel.....	3	7	52	70
TOTALS.....	81	85	1,094	1,155

These courses provided instruction in a wide variety of department activities, such as: Construction, Surveying, Design Surveying, Land Surveying, Drafting, Estimating, Inspection, Automotive Mechanics, Aerial Photograph Interpretation, Critical Path Scheduling and Shorthand. Sixty-seven per cent of the candidates writing examinations in connection with these courses were successful.

In addition to courses, qualifying examinations were conducted as follows:

BRANCH	NUMBER OF EXAMINATIONS		NUMBER OF CANDIDATES	
	1964-65	1965-66	1964-65	1965-66
Services.....	14	9	151	148
Operations.....	8	7	283	397
Design.....	2	2	42	41
Administration.....	0	1	0	2
TOTALS.....	24	19	476	588

These examinations were written by employees to qualify for Draftsman 1, Draftsman 2, Technician 2, Survey, Technician 3, Survey, Mechanic 2, Sign Painter Improver, Sign Painter Journeyman, Landscape Crewman, Highway Inspection Assistant 2 and Technician 2, Engineering Audit. Sixty-four per cent of the candidates were successful.

In addition to technical job training a regular program of safety instruction is conducted by the Personnel Branch Safety Section. A total of 3,283 employees attended the 25 courses held in the districts.

To assist the Municipalities of the province in training their construction personnel, eight courses were conducted by the Department, one on surveying and seven on inspection. One hundred and eighty-eight municipal employees attended these courses.

Services Branch's Mobile Training unit visited each of the eighteen districts and courses were held for Mechanics to upgrade their qualifications and keep them abreast of current developments in the mechanical repair trade.

One hundred and fifty-five employees were assisted either financially or through the granting of leaves-of-absence to attend courses conducted by outside agencies. This type of training is approved when it is not feasible to provide the training by in-service means and it is considered essential or beneficial to the Department's operations that specific employees should acquire special skills or knowledge.

One hundred and seventy employees took St. John Ambulance courses in the fundamentals of first aid and qualified for certificates.

A total of 5,351 employees participated in the various training activities conducted from April 1, 1965 to March 31, 1966.

## DEPARTMENTAL COUNCIL SYSTEM

The Departmental Council convened for seven meetings in the period from April 1, 1965 to March 31, 1966. The Departmental Council also arranged and held a two-day Council Conference at which the Chairmen of the twenty-eight Branch Councils attended. At this Conference government regulations, policies, classifications, salaries, etc. were reviewed. The Branch Council Chairmen took an active part in the Conference by the presentation of problems, and matters pertinent to their respective District, Branch or Region. General discussions were held on many other subjects of interest to the employees.

The annual election of employee representatives to the Departmental and Branch Councils was conducted in accordance with regulations made under the Public Service

Act. The Minister of Highways appointed his representatives to the Departmental and twenty-eight Branch Councils.

The interest shown by the Minister, Deputy Minister, Branch Heads and District Engineers in the Council System has made its operation a continuing success.

## SAFETY SECTION

The Safety Section, through the Director of Personnel, is responsible for the provision of safety training and accident prevention material for department employees.

In a programme designed to further improve the department's safety record, the policy of visiting districts or branches twice a year was continued.

As a result, it was possible to further increase the number of employees receiving accident prevention lectures from 1,900 in the fiscal year 1963-64 and 3,041 employees in the fiscal year 1964-65 to 3,726 in the year under review. Of this number 3,283 received instruction in their respective districts, while 463 attended courses at the departmental training school at Downsview.

Amongst those receiving safety instruction were patrolmen, foremen, mechanics, equipment instructors, labourers, equipment operators, survey inspection and other construction personnel and other groups of the regional and district staffs.

The programme of production and distribution of safety posters designed within the department was continued, many of these being directed towards the elimination of accidents which experience had indicated would occur on a seasonal basis. Articles were also prepared for publication in the D.H.O. News.

In addition to the normal safety training provided to employees, a two-day course "Fundamentals of First Aid" was provided to 269 employees by the St. John Ambulance. Those qualifying received certificates of proficiency.

The usual annual Safe and Skilled Driving Competitions (Roadeo) were held with all Districts participating, the finals for district winners being conducted at Downsview, with prizes being awarded at a function held at the completion of the Roadeo.

1,556 Equipment Operators entered in the Ontario Safety League Safe Driver Award Programme received awards for the calendar year 1965-66, a figure which has risen from 741 in 1955, which indicates a marked improvement in safety consciousness on the part of our operators.

The following tables summarize the department's industrial and motor vehicle accident experience:

### *Industrial Accidents:*

	FISCAL YEAR 1964-65	FISCAL YEAR 1965-66
Total Hours Worked.....	25,241,824	26,142,804
Number of Lost Time Accidents.....	634	603
Days lost as Result of Accidents.....	53,531	35,247
Frequency Rate.....	25.12	23.04
Severity Rate.....	2,120.72	741.70
Industrial Injury Costs.....	\$402,566.87	\$417,422.38

*Motor Vehicle Accidents:*

	FISCAL YEAR 1964-65	FISCAL YEAR 1965-66
Responsible Motor Vehicle Accidents.....	164	188
Miles Travelled.....	34,571,953	35,898,037
Frequency Rate per 100,000 Miles of Travel.....	0.47	0.52
Responsible Hourly Rated Equipment Accidents.....	29	20
Miles Travelled.....	3,064,840	2,838,655
Frequency Rate per 100,000 Miles of Travel.....	0.95	0.70
Total Responsible Accidents for Both Types of Equipment.....	193	208

There has been a slight increase in the frequency rate for mileage vehicles, from 0.47 in the year 1964-65 to 0.52 in the year 1965-66.

However, for the same periods, there was a further reduction on hourly-rated equipment from 0.95 to 0.70 for each 100,000 miles travelled.



## PLANNING BRANCH

**W. BIDE LL, P.Eng., Director of Planning**

## TRAFFIC AND PLANNING STUDIES DIVISION

**W. Q. Macnee, P.Eng., Traffic Planning Studies Engineer**

### PLANNING STUDIES SECTION

#### THE TORONTO AREA HIGHWAY STUDY—WESTERN SECTION

The work on the study was concentrated on the development of a traffic model for the area, to predict the person-trip patterns by mathematical formulae.

Subsequently, all pertinent data were projected to a 1985 level to develop a Highway System for the area capable of satisfying the motoring needs of the public for the next 20 years.

At the close of the fiscal year, seven alternate road systems were being tested that will eventually lead to the determination of a 1985 road network.

#### TORONTO AREA HIGHWAY STUDY—NORTHERN AND EASTERN SECTION

Work on this study paralleled that carried out on the Western Section, except that progress on this study was approximately two months behind that of the Western Section.

At the close of the fiscal year however, work was just being commenced on the testing of future road systems.

#### PETERBOROUGH AREA PLANNING STUDY

This study was inaugurated in the spring of 1965. The collection of base data in the form of roadside origin-destination surveys and population and employment figures was carried out during the summer of 1965. The latter information was collected by the Community Planning Branch of the Department of Municipal Affairs in detail, to assist in relating the socio-economic characteristics of the area with the established traffic patterns.

By the end of the fiscal year the origin-destination surveys were still being analysed. However, the inventory of all the pertinent physical characteristics of the roadway sections had been tabulated.

#### LAKE HURON-GEORGIAN BAY AREA PLANNING STUDY

This study was commenced in the spring of 1966, and at the close of the fiscal year was still in the preliminary planning stage. Suffice it to say that the field survey methods and general procedures had been determined.

The field surveys consisted of a weekday roadside origin-destination survey around the perimeter of the study area to be supplemented by a 10 per cent Home-Interview survey of the residents of the area. In addition, the same sample of residents were asked for their patterns of trips on a Sunday, to give some insight into the weekend travel patterns of the area.

#### BARRIE-SIMCOE COUNTY HIGHWAY STUDY

During the past year, the traffic survey data was processed and tabulated, other necessary socio-economic data was compiled, and the road inventory data was prepared. All this data is being utilized to develop traffic simulation models which will be used

to predict future traffic patterns, both weekday and weekend, in the study area. At the end of the year model development is well advanced.

#### LONDON AREA HIGHWAY PLANNING STUDY

The recommendations of this study were presented to the public in London on Oct. 12, 1965. The report was in the hands of the printers at the year end and should be published shortly.

#### KITCHENER AREA HIGHWAY PLANNING STUDY

The preliminary work for this study commenced at the year end in preparation for undertaking the field surveys during May and June, 1966.

#### BRANTFORD AREA HIGHWAY PLANNING STUDY

The existing and predicted future travel desires were developed and the analysis for a future highway network was started. The public presentation is planned for the fall of 1966.

#### UPPER OTTAWA VALLEY PLANNING STUDY

During the past fiscal year, analysis of the traffic data collected in the summer of 1964 was completed. This included prediction of future travel and distribution of these trips on Highway 17 and other connecting highways.

Following the public presentation planned for the fall of 1966, the report will be published.

#### EASTERN ONTARIO PLANNING STUDY

Study completed and presented publicly in October, 1965. Report published in July, 1966.

#### SOUTH WESTERN ONTARIO PLANNING STUDY

Study completed and presented publicly in July, 1966. Report will be published early in 1967.

#### KINGSTON AREA TRANSPORTATION STUDY

Field Data collected and processed during the year. Standard tabs and origin-destination tables compiled.

Traffic volume presently being assigned to various networks.

#### MARY SOUND-MUSKOKA AREA STUDY

Study design commenced in March, 1966. Field data presently being collected.

#### SPECIFIC STUDIES

In previous years specific requests for traffic information from other sections of the department were answered by the Planning Studies Section. During this fiscal year 119 written requests were received and a total of 116 replies were completed. In addition to the above, a large number of verbal traffic requests were also answered. The traffic requests ranged from single projected volumes or turning movements to route studies.

#### TRAFFIC CONTROL SECTION

During 1965 the Head Office group carried out a number of projects the most significant of these being the detailing of the final sign layouts for the new section of Hwy. 101 (the Toronto By-pass). A complete review of the operations of the Permanent

Counting Station was undertaken and a three-year program to rebuild and re-equip the stations with a view to higher efficiency and to future automation in the collection of traffic volume data was approved. The work on this project is to start in the next fiscal year. A reorganization of the Field Staff for Origin-Destination Survey work was experimented with successfully during the summer season and a recommendation that this be adopted for future use was made.

The Regional Offices conducted a considerable number of traffic studies as shown in the following tables. In particular South Western Region experimented with an area traffic control study, as opposed to specific location studies.

#### STUDIES COMPLETED

	EASTERN	CENTRAL	NORTHERN	S. WESTERN	TOTAL
Intersection Studies.....	6	55	24	32	117
Speed Zoning.....	2	15	31	28	76
Sign Layouts.....	47	26	30	46	149
Signal Studies.....	1	24	5	10	40
Illumination.....	40	39	9	11	99
Others.....	57	136	19	56	268
<b>TOTAL.....</b>	<b>153</b>	<b>295</b>	<b>118</b>	<b>183</b>	<b>749</b>

#### CHARACTERISTICS SECTION

During the year, Traffic & Planning Studies became a Division and Characteristics a Section.

Some 1144 specific requests for traffic data were completed during the year, consisting of 529 volume requests, 490 accident requests, 68 origin-destination requests and 57 speed requests. In addition, numerous incidental requests for data were answered, including many from private individuals; while considerable amounts of data were made available from the volume files to various firms of consulting engineers, planners, etc.

The number of Permanent (traffic volume) Counting Stations was increased to 32 by the addition of one station at Ottawa (Queensway) and three on Highway 401 in the Metro Toronto area (Kipling, Keele & Scarborough). However, one of the new stations (Kipling) and two older stations (St. Davids and Etobicoke) were not in full operation due to technical difficulties.

Several more Semi-Permanent (i.e. part year) stations were operated throughout the province, and the year ended with several more planned, including four to be installed within small municipalities in co-operation with the Department of Transport.

Routine traffic counts throughout the province continued to be obtained by contract, including additional counts at certain special locations i.e. Service Centre ramps on freeways. Routine vehicle classification counts continued to be obtained through the District offices. The first of the counts from the loop detectors installed on the ramps of the newly finished portion of reconstructed Highway 401 in the Metro Toronto area were also received towards the end of the year.

A computer program for the automatic processing of traffic counter hourly volume tapes was introduced towards the end of the year. Also started during the year were programs to automatically match up licence plate numbers in such traces of vehicular movements, and to calculate the percentages of the different types of vehicles from classification counts.



Accident data on Highways and Secondary Highways continued to be punched onto cards, with the annual summary of these data being produced by a computer program for the first time this year. Data concerning "non-reportable" accidents started to be received this year and this also was punched onto cards. Standard accident-experience listings were reduced from five years plus the current year to three years plus the current year, partly to tie in with the three years' data provided in other accident data summaries and partly to offset storage space requirements. A project was commenced to revise and relist the keypoints used in conjunction with the accident data in order to incorporate the key point code numbers needed for the punched card operations.

Some 315,000 O-D interviews were coded and checked during the year, about 200,000 from approximately 240 stations operated this year, with a further 115,000, obtained in previous years, being re-coded for further use. In addition a relatively small number of interviews taken by consultants were checked, while a considerable amount of further processing of these data was completed for the Planning Studies Section.

The various routine traffic characteristics reports were published as usual throughout the year.

#### HIGHWAY SAFETY

During the 1965 calendar year, motorists travelled an estimated 22 billion vehicle miles on the Province's 85,000 miles of highways, roads and streets, an increase of 6.1% over the 1964 mileage travelled. The King's Highway System, exclusive of Secondary Highways, accounted for some 46% of the total mileage and recorded 21.1% of the 128,462 motor vehicle traffic accidents reported for the year. The major controlled-access highways; the Queen Elizabeth Way, 400-401-402, etc; carried over 15% of the total vehicular miles travelled in Ontario, while only 5% of all accidents occurred on them.

In 1965, Ontario recorded 1,318 fatal accidents, resulting in 1,611 deaths; an increase of 187 or 13.1% over the 1,424 total for 1964. The King's Highway System, exclusive of Secondary Highways, accounted for 596 fatal accidents, which resulted in 765 deaths. In all Canada in 1965, there were 4,879 traffic deaths, a 4.8% increase over the previous high total of 4,655 for 1964. Ontario's 1,611 deaths accounted for 33.0% of the Dominion total. Traffic accidents in the States claimed an estimated 49,000 lives; a 3% increase over the 1964 total of 47,700.

In Ontario in 1965, over 26,000 accidents involved one vehicle only, while 25.3% of all (1,318) fatal accidents resulted when the vehicle struck a fixed object or went off the roadway. On the King's Highway System only, 156 single vehicle fatal accidents accounted for 26% of the total (596) fatalities, occurring on the highways. Drinking drivers were involved in at least 50% of these single vehicle accidents. In 1965, drinking drivers and pedestrians were involved in 37.4% of all fatal accidents occurring on the highways only. Pedestrian deaths accounted for 14.1% of the total persons killed and in 26.6% of these accidents, the pedestrian had been drinking.

The rapid growth of traffic in the Province has resulted in an increasing number of accidents, deaths and injuries. The true exposure to all accidents is probably more nearly approximated by the miles of travel by motor vehicles and the relationship of traffic accidents and deaths to vehicular miles seems to be the most widely accepted method of comparison.



The 1965 accident rate for all Ontario was 5.8, based on the number of reportable accidents for every one million vehicle miles of travel. The rate for the King's Highway System, exclusive of Secondary Highways, was 2.7 which was particularly encouraging when it is realized that Ontario, in 1965, had a motor vehicle registration of 2,510,840 and over 2,800,000 licenced drivers. Only nine States had a higher vehicle registration than this Province. The accident rate for the controlled-access highways was 1.8, up slightly from 1.7 for 1964, despite a considerable increase in traffic volumes.

The fatal accident rate in 1965, for all highways, roads and streets was 5.9 (fatal accidents per 100 million vehicle miles of travel) while the same rate was recorded for the King's Highway System, exclusive of Secondary Highways.

The 700 miles of controlled-access highways had a fatal accident rate of 2.6 with all of these highways having fewer fatalities than the previous year.

The mileage death or fatality rate for Ontario in 1965 was 7.2 (deaths per 100 million vehicle miles of travel) as compared to a slightly higher rate of 7.5 for the King's Highway System, exclusive of Secondary Highways. Ontario's controlled-access highways had a death rate of 3.5, a decided decrease from the 4.2 rate for 1964. The United States in 1965, had an aggregate death rate of 2.4 for all reporting turnpikes, as compared to the national average of 5.6 for all roads and streets.

During the fiscal year 1965-66, the Department of Highways continued to conduct Traffic Seminars throughout the Province, in co-operation with the Ontario Provincial Police. Attending these meetings were representatives from the Regional and District offices; the Ontario Provincial Police districts and detachments. Also in attendance, were chief constables and senior officers from municipal police departments. Informal discussions at these seminars resulted in many highway problems being brought to the attention of the Department. Improvements were carried out at several locations on our highways, particularly those considered accident prone or where other driving hazards existed.

During the fiscal year, the Office of the Supervising Coroner for Ontario forwarded 83 Coroner's Inquest Reports to the Traffic and Planning Studies Division, when recommendations were made by juries that the Department of Highways implement certain improvements at locations where fatal accidents occurred on the King's Highway System. The findings and recommendations were all given careful consideration and reports prepared for the Supervising Coroner. The Ontario Provincial Police, General Headquarters, also forwarded detailed reports regarding locations where fatal accidents occurred on the King's Highway System.

Motor vehicle accident statistics were compiled for presentation as highway safety evidence at Ontario Municipal Board Hearings, in the matter of applications by the Minister for the approval of the closing of certain roads intersecting controlled-access highways.

The Department continued to provide every co-operation to all concerned with highway safety. Two years ago, the Ontario Provincial Police started aircraft-patrol on highways in the Toronto and Sudbury areas to assist in the apprehension of speeder and other traffic law violators. In the spring of 1966, the Department marked additional highways in the St. Thomas, London, Sarnia, Barrie, Peterborough, Pembroke and Ottawa areas to enable the police to increase this type of enforcement. Traffic accident statistics were compiled for the selection of sections of highways having a high frequency of accidents, resulting from speeds and other traffic violations.

FUNCTIONAL PLANNING DIVISION

I. C. Campbell, P.Eng., Functional Planning Engineer

The policy of decentralizing the work in the Functional Planning Division continued during the period from April 1, 1965 to March 31, 1966 with the following additional duties being added to the responsibilities of the Regional Offices:

- Liaison with the Board of Transport Commissioners
- Building and entrance Permit applications adjacent to controlled access highways
- Property sales
- Liaison with the Ontario Water Resources Commission
- Ontario Municipal Board hearings

With the increase in work load in the Regions, the use of Consultant services continued to increase as indicated in the following Table:

YEAR	WORK PROJECTS IN PREPARATION BY CONSULTANTS
1962-63.....	1
1963-64.....	16
1964-65.....	33
1965-66.....	41

Due to the demands of this heavy work load, it became necessary to reduce the output of Functional Planning Reports and to concentrate on the processing of work projects by means of detail plans and profiles. This is shown in the following table:

JOBS ISSUED	1964-65	1965-66
By Functional Report.....	51	36
By Plan & Profile.....	126	166
TOTAL.....	177	202

HEAD OFFICE FUNCTIONAL PLANNING SECTION

P. J. Harvey, P.Eng., Functional Planning Review Engineer

This section of the Functional Planning Division has three main functions. It is responsible for reviewing the work of the four Regions, it prepares design drawings of all channelizations and interchanges, and it records and reviews property requests, property sales and subdivision plans affecting the Planning Branch.

A secondary function involves the preparation of geometric design standards for use in the Department and a Manual on this subject was prepared during this fiscal year for publication and is expected to be issued early in 1966.

A summary of the work processed by the Head Office Functional Planning Section and compared with the previous year is shown in the following tables:

PROJECT GROUPS (2)	1964-65	1965-66
Functional Reports issued.....	51	35
Functional Reports reviewed.....	53	50
Functional Reports prepared.....	1	—
Preliminary Functional Reports reviewed.....	96	74
Miscellaneous Reports prepared.....	29	29
Work Projects reviewed.....	134	201
Miscellaneous projects prepared or reviewed.....	40	102
Design Criteria prepared.....	—	3

Design Criteria reviewed.....	179	201
Design Criteria revised.....	—	53
Assumptions, Designations		
Closings, Transfers, C.A.H. Criteria.....	102	118
Agreements prepared (Consultants Municipalities).....	—	22
Permit applications reviewed.....	502	210
Property sales reviewed.....	338	109
<b>INTERSECTION DESIGN GROUP</b>		
Interchanges.....	46	42
Channelizations.....	93	82
Truck climbing lane designs.....	2	1
Minor intersections.....	—	17
Service centres .....	9	8
Miscellaneous projects.....	56	50
Standards.....	—	4
Contract review (work projects).....	—	173
<b>RIGHT-OF-WAY GROUP</b>		
<b>PROPERTY REQUESTS</b>		
Completed and reviewed.....	610	600
Initiated or approved.....	165	65
PROPERTY SALES.....	480	200
<b>PLANS OF SUBDIVISIONS</b>		
Plotted.....	600	660
Reviewed.....	190	235
EXEMPTIONS FROM SUB'N CONTROL BY-LAWS.....	—	500
OFFICIAL PLANS.....	20	10
AMENDMENTS TO OFFICIAL PLANS.....	75	100

## CENTRAL REGION—FUNCTIONAL PLANNING SECTION

**R. G. Burnfield, P.Eng., Regional Functional Planning Engineer**

During the past fiscal year, the following major Functional Planning Reports were completed:

DISTRICT 4, HIGHWAY 6	Freelton By-pass Thorold Tunnel, Welland Canal and approaches.
DISTRICT 6, HIGHWAY 27 (Phase 1)	From Q.E.W. to Richview Side Road.
DISTRICT 7, HIGHWAY 2	Soper Creek to Bowmanville
HIGHWAY 49	Picton to Roblin Mills

Functional Reports completed by consultants:

W.P. 204-59-2	Highway 3, Fort Erie to Gasline—District 4
C.A.H. 400 EXTENSION	Jane St. to Eglinton Ave. including 4 interchanges and 22 structures—District 6

Feasibility Study (Phase II) of Highway 27 improvement including the Belfield Expressway—District 6

TYPE OF WORK	DIST. 4		DIST. 6		DIST. 7		TOTAL	
	64/65	65/66	64/65	65/66	64/65	65/66	64/65	65/66
FUNCTIONAL REPORTS								
Completed.....	6	3	4	2	2	2	12	7
In progress.....	12	14	8	6	12	7	32	27
GRADING WORK PROJECTS								
Completed.....	5	12	1	7	3	8	9	27
In progress.....	4	37	1	19	7	11	12	67
RESURFACING AND PAVING PROJECTS								
Completed.....	—	2	—	1	—	6	—	9
In progress.....	—	8	—	1	—	13	—	22
INTERCHANGES								
Completed.....	4	6	10	11	4	—	18	17
In progress.....	28	22	11	13	—	3	39	38
STRUCTURES								
Completed.....	17	14	6	36	1	6	24	56
In progress.....	56	50	33	57	3	11	92	118
CHANNELIZATIONS								
Completed.....	4	4	14	3	6	2	24	9
In progress.....	26	1	10	2	4	3	40	6
NON WORK PROJECTS								
Completed.....	—	13	—	22	—	5	—	40
In progress.....	—	2	—	6	—	11	—	19
SPECIAL STUDIES								
Completed.....	—	4	4	9	6	—	10	13
In progress.....	—	3	—	2	—	1	—	6
BOARD OF TRANSPORT COMMISSION								
Completed.....	1	9	—	6	—	4	1	19
In progress.....	10	8	3	1	6	6	19	15
					64/65	65/66		
PROPERTY SALES.....					116	200		
PROPERTY REQUESTS.....					116	43		
APPLICATIONS FOR PERMITS.....					518	626		
C.A.H. CRITERIA.....					—	15		
ASSUMPTIONS AND DESIGNATIONS.....					19	18		
TRANSFERS.....					32	4		
CLOSINGS.....					32	5		
SUBDIVISIONS.....					194	338		

SOUTHWESTERN REGION—FUNCTIONAL PLANNING SECTION

R. G. Gascoyne, P.Eng., Regional Functional Planning Engineer

Of the various projects considered in the Western Region during the past year, the following are worthy of special note:

**HIGHWAY 40** Since the Provincial Government announced the establishment of a parkway commission to determine the ultimate recreational and related development appropriate for existing Highway 40 between Sarnia and Wallaceburg, it became necessary to conduct an exhaustive study to provide an alternate modern high speed facility which would eliminate the through truck and passenger traffic from the parkway.

**HIGHWAY 126** One of the recommendations of the London Area Transportation



Study as presented to interested municipalities in October, 1965, was the requirement for a new controlled access highway of the expressway type between London and St. Thomas. Closely connected with this was the requirement for an arterial bypass of St. Thomas.

#### FUNCTIONAL PLANNING REPORTS COMPLETED BY CONSULTANTS

DISTRICT 1, W.P. 144-63	Highway 401 Interchange northerly to Chatham south limits. Connecting link Chatham south limits to Highway 2, 0.9 miles.
W.P. 145-63	C.N.R. Overhead, 0.8 miles south of Highway 2 (connecting link).
W.P. 145-63	C.N.R. Overhead, 0.8 miles south of Highway 2 (connecting link).
W.P. 147-63	0.1 miles north of Highway 401 interchange northerly to Highway 2.
DISTRICT 2, W.P. 239-61-2	0.4 miles north of Highway 3 Simcoe northerly 2.0 miles Highway 24.
W.P. 251-63	Lynn River structure on Highway 24.
W.P. 252-62	C.N.R. Subway on Highway 24.

TYPE OF WORK	DIST. 1		DIST. 2		DIST. 3		DIST. 5		TOTAL	
	64/65	65/66	64/65	65/66	64/65	65/66	64/65	65/66	64/65	65/66
FUNCTIONAL REPORTS										
Completed.....	3	1	9	1	4	1	2	5	18	8
In progress.....	6	5	1	15	5	10	6	12	18	42
GRADING WORK PROJECTS										
Completed.....	3	1	3	1	2	4	1	8	9	14
In progress.....	2	1	—	1	1	12	2	14	5	28
RESURFACING AND PAVING PROJECTS										
Completed.....	—	4	—	3	—	3	—	7	—	17
In Progress.....	—	1	—	1	—	3	—	3	—	8
INTERCHANGES										
Completed.....	1	1	4	4	1	—	—	—	6	5
In Progress.....	—	—	—	4	—	1	6	7	6	12
STRUCTURES										
Completed.....	12	12	11	12	6	3	—	6	29	33
In progress.....	6	1	—	19	3	4	9	11	18	35
CHANNELIZATIONS										
Completed.....	1	4	7	4	4	3	2	4	14	15
In Progress.....	—	1	—	1	3	13	2	5	5	20
NON WORK PROJECTS										
Completed.....	5	4	2	2	3	2	9	4	19	12
In Progress.....	2	1	—	—	—	3	1	2	3	6
SPECIAL STUDIES										
Completed.....	—	—	—	—	—	—	—	—	—	—
In Progress.....	—	—	—	—	—	—	—	1	—	1
BOARD OF TRANSPORT COMMISSION										
Completed.....	—	—	—	5	—	1	—	3	—	9
In progress.....	—	2	—	8	—	4	—	2	—	16

	64/65	65/66
PROPERTY SALES.....	53	21
PROPERTY REQUESTS.....	45	50
APPLICATIONS FOR PERMITS.....	297	179
C.A.H. CRITERIA.....	—	7
ASSUMPTIONS AND DESIGNATIONS.....	1	12
TRANSFERS.....	4	5
CLOSINGS.....	2	1
REVOCATIONS.....	—	1
SUBDIVISIONS.....	40	151

NORTHERN REGION—FUNCTIONAL PLANNING SECTION

P. D. Billings, P.Eng., Regional Functional Planning Engineer

The following projects worthy of special note were completed by this Region during 1965-66:

- HIGHWAY 144 Several projects on the Benny to Gogama section of the Sudbury-Timmins Highway were completed.
- HIGHWAY 17 Three projects were completed on the section between North Bay and Pembroke and the other projects in this section are in progress.
- HIGHWAY 67 The section of this highway between Highway 101 and Highway 11 was completed.
- HIGHWAY 63 Two projects between North Bay and Feronia were completed.
- HIGHWAY 123 The section of Highway 123 from the junction of Highway 11 to the North Bay Airport was completed.

Consultant services were used to produce Functional Reports as follows:

- W.P. 344-61 Highway 16 from Station Road to Bissett Creek, District 13 345-61
- W.P. 209-64 Sec. Highway 543 from Sudbury southerly, District 17
- W.P. 14-62 Highway 69, Hanmer to Capreol, District 17
- W.P. 190-64 Highway 35, Carnarvon northerly, District 11. 178-64 191-64
- W.P. 22-64 Highway 67, from Highway 11 to Highway 101, District 14. 23-64

TYPE OF WORK	DIST. 11		DIST. 13		DIST. 14		DIST. 17		TOTAL	
	64/65	65/66	64/65	65/66	64/65	65/66	64/65	65/66	64/65	65/66
FUNCTIONAL REPORTS										
Completed.....	7	3	4	4	1	1	1	5	13	13
In progress.....	7	4	4	4	1	1	3	2	15	11
GRADING WORK PROJECTS										
Completed.....	2	6	3	14	12	6	5	10	22	36
In progress.....	—	7	6	6	1	7	—	4	7	24

**RESURFACING AND PAVING  
PROJECTS**

Completed.....	—	1	—	1	—	—	—	6	—	8
In progress.....	—	—	—	—	—	—	—	—	—	—

**INTERCHANGES**

Completed.....	—	—	—	—	—	—	—	—	—	—
In progress.....	—	—	—	3	—	—	—	—	—	3

**STRUCTURES**

Completed.....	7	1	3	4	3	1	7	3	20	9
In progress.....	—	4	—	8	—	3	—	6	—	21

**CHANNELIZATIONS**

Completed.....	4	5	1	5	1	2	3	7	9	19
In progress.....	—	—	—	8	—	1	—	2	—	11

**NON WORK PROJECTS**

Completed.....	7	6	14	8	4	3	8	10	33	27
In progress.....	—	1	—	1	—	—	—	2	—	4

**BOARD OF TRANSPORT**
**COMMISSION**

Completed.....	—	—	—	—	—	—	—	2	—	2
In progress.....	—	1	—	4	—	—	—	3	—	8

64/65      65/66

PROPERTY SALES.....	148	108
PROPERTY REQUESTS.....	—	81
APPLICATIONS FOR PERMITS.....	212	269
C.A.H. CRITERIA.....	1	35
ASSUMPTIONS AND DESIGNATIONS.....	4	14
TRANSFERS.....	—	9
CLOSINGS.....	—	9
REVOCATIONS.....	—	—
SUBDIVISIONS.....	—	31

**EASTERN REGION—FUNCTIONAL PLANNING SECTION**

**J. L. Forster, P.Eng., Regional Functional Planning Engineer**

Although this Region produced eight Functional Reports and ten grading work projects during the year, none of these was sufficiently complex or unusual to warrant special mention. One of the fundamental factors which affected the work of this Region during the year was the completion of the Eastern Ontario Area Planning Study which was presented at a public meeting in Ottawa in the Fall of 1965. Two major Freeways—Highway 417 from Ottawa to the Quebec Border to join up with the Trans-Canada Highway being constructed by the Province of Quebec and Highway 416 from Ottawa to Highway 401 in the Brockville-Prescott area were recommended by this Study. Work was begun on the first phases of the functional planning for both these roads in this fiscal year. In addition, work of the Queensway Extension westerly from Ottawa reached the final stages and is expected to be completed early in the following fiscal year.

The following Functional Planning Reports were completed by consultants:

W.P. 28-62 Highway 43, Winchester westerly 6.8 miles, District 9.

W.P. 39-63 Highway 127, Maynooth to Lake St. Peter, District 10.

A summarized account of the various works completed and in progress follows:

TYPE OF WORK	DIST. 8		DIST. 9		DIST. 10		TOTAL	
	64/65	65/66	64/65	65/66	64/65	65/66	64/65	65/66
FUNCTIONAL REPORTS								
Completed.....	2	3	—	2	2	3	4	8
In progress.....	8	14	4	16	13	14	25	44
GRADING WORK PROJECTS								
Completed.....	3	3	3	5	—	2	6	10
In progress.....	—	1	—	1	3	7	3	9
RESURFACING AND PAVING PROJECTS								
Completed.....	1	2	3	3	—	1	4	6
In progress.....	—	3	2	3	—	2	2	8
INTERCHANGES								
Completed.....	3	2	1	1	—	—	4	3
In progress.....	3	2	2	7	—	—	5	9
STRUCTURES								
Completed.....	10	5	3	7	2	4	15	16
In progress.....	10	10	10	22	7	7	27	39
CHANNELIZATIONS								
Completed.....	2	2	1	4	—	—	3	6
In progress.....	3	3	3	10	4	1	10	14
NON WORK PROJECTS								
Completed.....	9	5	4	—	12	8	25	13
In progress.....	2	4	1	5	1	2	4	11
SPECIAL STUDIES								
Completed.....	—	—	—	—	—	—	—	—
In progress.....	—	1	—	4	—	—	—	5
BOARD OF TRANSPORT COMMISSION								
Completed.....	3	3	—	5	1	—	4	7
In progress.....	4	2	5	3	—	1	9	6
					64/65	64/65		
PROPERTY SALES.....					145	97		
PROPERTY REQUESTS.....					27	45		
APPLICATIONS FOR PERMITS.....					136	135		
C.A.H. CRITERIA.....					2	1		
ASSUMPTIONS AND DESIGNATIONS.....					7	10		
TRANSFERS.....					15	5		
CLOSINGS.....					8	12		
REVOCATIONS.....					1	1		
SUBDIVISIONS.....					34	45		

PROGRAM DIVISION

INVENTORY SECTION

W. G. Wigle, P.Eng., Program Engineer

In 1965 the highway, structure and railway crossing units of the Inventory Section continued their duties in maintaining the engineering inventory on provincial roads, structures and railway crossings. It provided up-to-date basic information used by other units of the Program Division and answered numerous requests for inventory information of all types from within and without the department.

The annual highway, structure and railway crossing inventory books were prepared and published. The mileage triangles, used in the official road maps, were checked and



revised mileages included where new highways were opened to traffic. Numerous requests for point-to-point mileages from various government departments and outside sources, were also received and answered.

### **SCHEDULING SECTION**

This section maintains the schedule for pre-contract engineering of all projects on the current and proposed capital construction programs. This ensures that the various phases of preparation of contracts are carried out in an orderly manner and completed in sufficient time to meet the necessary award dates. A further schedule of award dates is also prepared to ensure that capital construction expenditures are kept at the level of funds voted by the Legislature for the fiscal year. In order to co-ordinate the information required for both these schedules increasing use is being made of the facilities of the Electronic Computer Centre.

### **ADVANCE PROGRAM SECTION**

The function of this section is to review, revise and extend current and future highway construction programs. Road signs, structures, intersections and railway level crossings are investigated. Justification reports are prepared to identify deficiencies, to recommend type, extent and priority of remedial work, to set up and group work projects, to provide preliminary cost estimates. These reports provide a basis for planning designing and scheduling future construction. During the fiscal year, 527 new projects were so programmed. Existing programs were revised on the basis of further up-to-date information from various sources.

The "1966-67 Capital Construction Program" was prepared in book form for distribution to the Legislature and news media at the time of budget presentation.

Many requests for data concerning current, proposed or possible construction were received from Senior D.H.O. Officials, other Departments, Members of the Legislature, Municipalities, Chambers of Commerce etc. Special reports, with maps and graphs when necessary, were prepared in answer to these requests.

### **SPECIAL STUDIES SECTION**

This section during the fiscal year 1966/67 has made a considerable progress in study on various aspects of controlled-access highway policies and warrants for individual highway classes. For this a detailed evaluation of present highway status and their over-all effectiveness has been performed. This is undertaken in order to provide the best suited framework for necessary changes in past practice to meet the present and anticipated highway needs.

Highway statutes, present departmental policies and internal regulations are examined comprehensively as they relate to the principles and practices of planning, land use, land acquisition and over-all highway system.

At the same time the Special Studies Section has received and appropriately handled numerous requests for data and information regarding motor vehicle travel components (present and forecasted data) highway revenue and other economic and fiscal factors and related statistical data pertaining to highway problems.

TRAFFIC SECTION—NORTHWESTERN REGION

H. A. Mantle, P.Eng., Asst. Planning Engineer (Northwest)

W. G. Sawyer, P.Eng., Regional Functional Planning Engineer

The Northwestern Region, situated in Port Arthur, is responsible for the functional planning work and engineering surveys and traffic studies in Algoma, Cochrane, New Liskeard, Sudbury, Kenora and Thunder Bay District.

The following table is a summary of the work completed and in progress:

FUNCTIONAL REPORTS	COCHRANE	SAULT STE. MARIE	FORT WILLIAM	KENORA
Completed.....	—	—	—	—
In progress.....	—	1	—	2
GRADING WORK PROJECTS				
Completed.....	2	5	6	1
CHANNELIZATIONS				
Completed.....	—	3	4	3
STRUCTURE PROJECTS				
Completed.....	4	9	6	1
NON-WORK PROJECTS				
Completed.....	—	—	—	1

	COCHRANE	SAULT STE. MARIE	FORT WILLIAM	KENORA	NEW LISKEARD
ENGINEERING SURVEYS					
Planning Mileage.....	4.1	37.5	19.6	39.0	22.7
Survey Mileage.....	16.4	51.5	36.7	65.4	—
BRIDGE SITES					
(1) Plans.....	1	4	4	—	3
(2) Survey.....	1	4	4	1	—
RAILWAY CROSSING SURVEYS					
(1) Plans.....	—	2	3	—	—
(2) Surveys.....	—	2	3	2	—
MISCELLANEOUS					
(1) Plans.....	—	—	5	2	—
(2) Surveys.....	—	—	5	2	—
CROSS SECTIONS					
Plotted.....	6.6	30.5	15.9	21.0	—
Field.....	6.6	30.5	15.9	21.0	—

TRAFFIC SECTION—PLANNING BRANCH

Staff	1 Regional traffic analyst	
	2 Traffic technicians	
Analytical studies completed	—Speed zoning studies.....	4
	Intersection studies.....	18
	Illumination studies.....	16
	Signing studies.....	31
	Other studies.....	14

Field work completed	—Railway crossing surveys.....	11
	Classification counts.....	70
	Turning movement counts.....	30
	Machine counts.....	54
	Speed surveys.....	2
	Traffic signal survey.....	1
	parking survey.....	1
Permanent counting station—Nipigon—Maintenance and tape collection.....		
Meetings attended	—O.P.P. traffic seminars.....	3
	Traffic safety workshop.....	1
		4

## RESEARCH BRANCH

### M. D. ARMSTRONG, P.Eng., Director of Research

Work has proceeded on several major projects during the year under review but the amount of progress, and the general development of the Branch, has been severely limited by a shortage of recruits suitable for research work.

There is a list of pressing research problems which grows as the scale of the Department's operations increases and its engineering processes become more sophisticated. In the coming year we shall be redoubling our efforts to obtain more research staff in order to seek solutions to more of these problems. Whenever possible the research facilities of the Ontario Universities are tapped but the amount of work that can be farmed out in this way is also controlled by the size of our own research staff.

#### ROAD BASES EXPERIMENT

The Road Bases experiment on Highway 10 north of Brampton was constructed and opened to two-way traffic on October 4th, 1965. The field test results showed that, on the whole, a satisfactory degree of control of the construction was achieved. It was unfortunate, however, that weak subgrade conditions due to sponginess of the imported soil made it impossible to construct the section with the thinnest crushed gravel base and this section (No. 23) was dropped from the experiment at the time of construction and reconstructed shortly afterwards.

In the case of the bituminous-stabilized bases, the moisture content of the granular material was higher than specified due to wet weather while the material was being stockpiled, and when the asphalt emulsion was added the high combined fluids content of the mixed material made the bases difficult to compact. After surfacing, the strength of these bases as reflected in the Benkelman recovery tests was rather low and some small areas of failure developed in the transition zones shortly after the test sections were opened to traffic. The strength of the sections increased quite rapidly, however, and when the failed areas were repaired in preparation for the winter it was only necessary to replace the top course of the surfacing. Periodic recovery tests showed that the stabilized bases continued to gain strength and by the spring of 1966 the strengths were comparable with the sections incorporating the other types of bases.

The test sections only carried two-way traffic until the new south-bound lanes were opened to traffic on the 29th October, and since that date they have carried the regular north-bound traffic.

The experimental design provided for the failure of some of the weaker, thinner sections during the first spring but all of the test sections came through the first winter and spring period, and although some sections gave high Benkelman beam recovery values in the spring break-up periods and in some places permanent deformations as large as 0.6 in. were measured, there were no structural failures requiring repair. The diagram shows the strengths of the individual sections as measured by the Benkelman beam recovery test shortly after the experiment was opened to traffic, and the amounts of permanent deformation in May, 1966. It is too early to draw conclusions but the early indications are that the performance of the three stabilized bases is very promising in comparison with the more conventional types of bases.

#### USE OF RUST INHIBITORS IN ROAD SALT

The long-term tests of inhibitors that might be used in salt used for snow and ice





control on highways were started in September 1965 and will continue until May 1967. In studying the effects of the inhibitors on the rusting of auto-body steel the amount of rusting is being determined month by month for the full test period in special rotary traffic simulators at Downsview, on trucks operating daily throughout the year in five parts of Ontario and in atmospheric exposure racks at five centres in Ontario.

The results of the comparison of the effectiveness of the three types of rust inhibitors cannot be analyzed until after the completion of the test in May 1967. It has, however, been very interesting to observe the wide differences in atmospheric and vehicle corrosion in the different parts of the Province.

#### ECONOMIC IMPACT OF VEHICLE LOAD LIMITATIONS

The studies of the economic implications of vehicle load limitation reached a point at the end of the year under review, where an interim report could be prepared. It compares the costs of strengthening the existing roads and bridges in Ontario to carry various increased maximum vehicle loads with the potential reductions in annual trucking costs that could result from the increased loads. The figures in the interim report are tentative and where approximations had to be made these had the effect of deliberately underestimating the cost of strengthening the existing roads and bridges. In spite of this, and ignoring the estimated cost of upgrading the roads and bridges to fully meet the requirements of the present maximum loads, it was found that at three levels of loading above the present limits the potential annual savings represented only 4 to 5 percent of the capital required to upgrade the system, and it was tentatively concluded that, at this time, it would be uneconomic to adopt higher vehicular road limits for general use in Ontario.

This problem undoubtedly merits further, more detailed investigation. It should be possible for instance, to make a better estimate of the costs of upgrading the Province's bridges to carry heavier vehicles and special efforts are being made to develop improved methods of estimating ultimate load capacity of bridges.

#### TRANSVERSE CRACKING OF BITUMINOUS PAVEMENTS

The appearance of many roads has been marred quite early in their service lives by the development of transverse cracks. The spacing and width of these cracks varies from job to job but on some roads the cracks are only a few feet apart and in some cases small bumps develop at the cracks and cause a very uncomfortable ride.

This problem arises in other parts of Canada and in the northern United States and several suggestions have been put forward in an attempt to explain how the cracks occur. To date, however, there is no satisfactory solution to the problem and a study is now under way in Ontario to determine the causes of the cracks.

It is usually possible to find lengths of road which are cracked and others, in the same locality, which are not cracked, and pairs of contracts have been selected in several parts of the Province for investigation. Detailed maps of the cracks are first prepared and then a number of test holes are opened in each pavement to study the component layers of the pavements and the subgrade soil conditions. Samples of materials are removed for laboratory investigation, and in selected cases large amounts of soils and granular materials have been obtained for special studies of the cold temperature properties of the materials as they exist in the pavement structure.

## RESEARCH IN HIGHWAY TRAFFIC

Several studies are under way in the field of Highway Traffic. Two such studies are related to Traffic Planning. One is aimed at developing a method of estimating daily and hourly traffic volumes from short period counts, and the other is an examination of the most effective sampling procedure for roadside interview traffic studies.

A continuing project in Traffic Operations has been the development of volume warrants for left-turn storage lanes at unsignalized intersections.

## ULTIMATE LOAD CAPACITY OF BRIDGES

A problem of wide concern among bridge engineers is the estimation of the ultimate strength of bridge structures and special studies are continuing in the Research Branch into some aspects of this problem.

Vehicle parameters, based on the arrangement, spacing, and loading of axles, have been developed which will simplify the calculation of the level of overstress of simply supported spans under specific vehicles. The method will be extended to cover other types of bridges in order that it may be used in the studies of the economic implications of vehicle load limitation to indicate the number of bridges that would have to be replaced if loads were increased to certain higher levels and the degree of overstress is limited to specific percentages.

## MAINTENANCE MANAGEMENT STUDY

In 1965 the Department engaged the Consulting firm of Roy Jorgenson and Associates to evaluate and report on the present maintenance management practices. As a result of this initial study, a second contract was awarded to the firm to continue the work with the objective of developing a comprehensive management system which would permit a high degree of objectivity in decision making.

The present study has three main areas of activity, the development of an information reporting system, work measurement and the development of quality standards, and the production of a training syllabus for maintenance personnel. The study is being directed by the Consultant for the Operations Branch and the Research Branch is acting as project coordinator.

## STRUCTURAL EVALUATION OF MUNICIPAL ROADS

Although an extensive background of experience has been compiled on the use of the Benkelman Beam for the structural evaluation of highway pavements, little experience is available on the application of the beam to the evaluation and design of pavements for small volumes of traffic commonly encountered on municipal roads and streets.

A study is now in hand to establish deflection criteria for use in evaluating municipal roads subject to different amounts of traffic.

In the recently completed County Roads Needs Study the evaluation of the structural adequacy of the pavements was based on visual inspection. When the Study is repeated a more rational procedure would be needed and, assuming the present studies establish effective deflection criteria, the Benkelman Beam procedure should meet the need.

## D.H.O. TECHNICAL REPORTS

The following Technical Reports were published during the year under review:

- RB 103 The Consolidation of Some Normally Consolidated Fine-Grained Soils Subjected to Large Load Ratios and One-Dimensional Drainage, by I. G. P. Raymond, Queen's University. (OJHRP Report on Project Q-32).



- RB 104 The Consolidation of Multi-Layered Soils Subjected to Load Ratios and One-Dimensional Drainage, by Dr. G. P. Raymond and H. T. Chan, Queen's University. (OJHRP Final Report on Project Q-32).
- RB 105 A Measure of Pavement Unserviceability, by Dr. B. G. Hutchinson, University of Waterloo. (OJHRP Final Report on Project W-2).
- RB 106 The Distribution, Character and Basic Properties of Cherts in Southwestern Ontario, by K. W. Ingham and Z. Dunikowska-Koniuszy. (Prepared for presentation at the 45th Annual Meeting of the Highway Research Board, Washington, D.C., January, 1966).
- RB 107 The Beneficiation of Aggregates by Jigging, by K. W. Ingham.
- RB 108 Multipath System Traffic Assignment Algorithm, by Professor W. A. McLaughlin, University of Waterloo. (OJHRP Final Report on Project W-3).
- RB 109 The Incidence of Stripping and Cracking of Bituminous Pavements in Ontario, by H. J. Fromm, W. A. Phang and M. Noga. (Presented at the 10th Annual Conference of the Canadian Technical Asphalt Association, Quebec City, 1965).
- RB 110 Evaluation of Thin Hot-Mix Surfacing Used on Ontario's Highways, by J. T. Corkill and W. R. Bennett. (Presented at the 10th Annual Conference of the Canadian Technical Asphalt Association, Quebec City, 1965).
- RB 111 Parameters of Recreational Travel in Ontario: A Progress Report, by Dr. R. I. Wolfe. (Prepared for presentation at the 46th Annual Convention of the Canadian Good Roads Association, Saskatoon).
- RB 113 The Compaction of Asphaltic Concrete on the Road—Part II, by H. J. Fromm and W. A. Phang. (Presented at the Annual Meeting of the Association of Asphalt Paving Technologists, Minneapolis, Minnesota, February, 1966).
- RB 114 Research on Skid Resistance, by T. I. Csathy, W. C. Burnett and M. D. Armstrong. (Submitted to the Highway Research Board for presentation at the 45th Annual Meeting, Washington, D.C., 1966).

Copies of these reports may be obtained from the Research Branch.

#### THE ONTARIO JOINT HIGHWAY RESEARCH PROGRAMME

In the year 1965/66, new projects were assigned to the Universities and funds were authorized to permit the completion of existing projects and the preparation of reports on projects completed earlier.

The new projects were as follows:

at Queen's University:

1. Lateral Consolidation of Varved Clay (Q-38).
2. Relationship of Peak-Hour to 24-Hour Travel Patterns (Q-39).
3. Gravity Model for Rural Trip Prediction (Q-40).

at Waterloo University:

4. Economic Evaluation of Pavement Design Decisions (W-4).
5. Evaluation of the Multi-Path Assignment Algorithm (W-5).
6. A Systems Model for Recreational Traffic Flows in Ontario (W-6).

at the University of Toronto:

7. Aerial Triangulation in Highway Engineering (T-25).

at the Ontario Research Foundation:

8. Stripping in Asphalt/Aggregate Mixtures (ORF-1).



OJHRP reports published or approved for publication during the year were as follows:

- Report No. 39: Highway Bridge Vibrations. Part III: Cantilever-Type Structures (Queen's).
- Report No. 40: Highway Bridge Vibrations. Part IV: Vibration of Continuous Type Structures (Queen's).
- Report No. 41: Prediction of the Buckling Loads of Columns by Non-Destructive Testing Methods (Queen's).
- Report No. 42: Factors Affecting Merging Traffic on the Outer Ramps of Highway Interchanges (Queen's).
- Report No. 43: Behaviour of Diverging Traffic on the Outer Ramps of Highway Interchanges (Toronto).

## SERVICES BRANCH

### L. R. Eadie, Director of Services

The Services Branch, through its various sections, functioned throughout the year as co-ordinator and expeditor of services for the other branches of the department.

The eleven Sections of the Services Branch are:

1. Executive
2. Administrative
3. Documents
4. Equipment
5. Office Services
6. Special Services
7. Supply
8. Tenders

## RIGHT-OF-WAY DIVISION

9. Land Surveys
10. Property
11. Regional Services Managers

## ADMINISTRATIVE SECTION

### I. L. Monkman, Administrative Officer

The Administrative Section administers the clerical processing of accounts payable and receivable, personnel records and documentation, attendance recording, preparation of payrolls and compilation and maintenance of the statistical records of the Services Branch. The Section also formulates and implements the procedures for these functions.

## DOCUMENTS SECTION

### M. Fraser, Superintendent

The Section provides record management services for the department. These include the operation of a central depository for correspondence, plans and records, the development of record retention and disposal policy and the operation of a micro-filming unit.

Supervision of the Libraries, including subscription services and the distribution of periodicals and technical information, constitutes another of the section's activities.

An editing service is provided for bulletins and instructional manuals.

Service requirements increased over previous years. Services provided during the year included:

Miscellaneous reproduction (from copy)	365,641	Increased, 10%
Miscellaneous prints (from microfilm)	19,486	Increased, 79%
Library circulation,	5,867	Increased, 10%
Documents microfilmed	4,823,033	Decreased, 19%

Record retention and disposal policy is constantly under review to ensure that only

documents of lasting record value are retained or microfilmed. Major policy change was made in general correspondence files by reducing the retention period from 10 to 5 years. This released some 3,500,000 documents for microfilm and disposal. Another significant change is that of retaining of invoices for a further 4 year period, then destroying them without microfilming. New equipment and procedures in the Microfilm Unit resulted in a saving of some \$14,000 while maintaining the same production levels relative to the staff employed. A backlog of documents to be microfilmed exists. However, as microfilming continues this backlog should be appreciably reduced during the coming year.

The transfer of original plan tracings to London Regional Office, which last year was carried out on an experimental basis, has proven satisfactory and will be extended to the other regions during the coming year.

## EQUIPMENT SECTION

**W. G. Cooke, P.Eng., Superintendent**

Equipment Section provides equipment for the department and the technical supervision necessary for the maintenance of such equipment.

The Head Office staff prepares specifications; inspects all major equipment purchases and develops new machines.

Budget requirements for equipment replacement are based on a cost analysis programme worked out in conjunction with the Electronic Computing Branch. Additional equipment is also supplied to take care of expanding departmental responsibilities and services.

Control of departmental usage of equipment, and cost of repairs, is done through a continuing study carried on by the Section, working with the Electronic Computing Branch.

General supervision and organization of D.H.O. garages, staffs, equipment, records and procedures, as well as vehicle maintenance methods and programmes, are the responsibility of the Section.

The Section operates two garages—District No. 42 at Downsview, and Surbiton Place at the Parliament Buildings. It also operates the Instrument Repair Shop at Downsview. Its Training School was active throughout the Province, giving courses on D.H.O. mechanics and allied trades.

Nine miles of asphalt roads were "deslicked" by the Section's Deslicker.

The Section's tree planters moved and replanted 1,333 trees and shrubs, and 100 trees were lifted by the tree saver machine and planted by other forces.

The Section arranged for and supervised the drilling of 45 wells. The Well Test Unit cleaned and tested 29 wells.

Staff is supplied by the Section for instrument evaluation studies, special engineering work, and special ferry projects.

The Section is responsible for the control of parking spaces for employees, and policing of the parking lots at Downsview.

Drives, parking lots, and miscellaneous areas adjacent to the Department's buildings at Downsview are maintained by the Section.

The mud jacking crew which was organized in the fall of 1965 to carry out mud jacking operations throughout the Province, was active until the freeze-up.

The following units of equipment were used during the year.

## GENERAL

Augers, earth.....	32	Mud jacks.....	1
Backhoes.....	2	Plants, crushing.....	2
Benders, bar.....	10	Plants, port. screening.....	8
Blowers, truck mounted, snow.....	14	Plants, generating power.....	91
Blowers, tractor mounted, snow.....	6	Ploughs, one way.....	866
Blowers, walking type, snow.....	2	Ploughs, reversible.....	43
Compactors.....	15	Ploughs, vee.....	409
Compressors.....	284	Pumps, dispensing.....	255
Conveyors.....	8	Pumps, fire protection.....	23
Cranes, hydraulic.....	4	Removers, paint line.....	1
Cranes, yard.....	2	Rodders, power.....	1
Cranes, truck attached.....	19	Rollers.....	51
Chippers, wood.....	6	Roughness machines (road bump test).....	3
Cheslickers.....	1	Sandspreader bodies.....	628
Distributors, emulsion.....	16	Sand driers.....	9
Ditchers.....	2	Scales, highway.....	58
Drills, core.....	3	Seeders, hydro.....	19
Ductors.....	7	Sewer cleaners (truck loader).....	1
Drummers.....	8	Sewer cleaners (power bucket).....	1
Generators, sand blast.....	30	Shovels, power.....	3
Generators, steam.....	87	Snowmobiles.....	5
Gradalls.....	8	Spray painting units, port.....	7
Gradebuilders.....	46	Sprayers, weed.....	45
Graders, leaning wheel.....	1	Spreaders, mulch.....	19
Graders, power.....	318	Stripers.....	21
Hydraulic units, electric.....	289	Swamp buggies.....	5
Hydraulic units, full.....	539	Sweepers, power.....	18
Hydraulic units, power.....	2	Tractors, track.....	41
Lifts, aerial.....	1	Tractors, wheeled.....	431
Loaders.....	140	Trailers.....	420
Maintainers.....	5	Trucks.....	1,776
Maintainers, multi-blade.....	2	Welders.....	53
Maintenance kettles.....	155	Wings, truck mounted, right.....	636
Mixers, cement.....	8	Wings, truck mounted, left.....	5
Mixers, cold patch.....	4	Wings, grader, right.....	162
Mixers, paint.....	20	Wings, grader, left.....	2
Mixers, paint and bead.....	19	Zone line testing machines.....	1
Mixers, pulvi.....	7	Miscellaneous equipment (not detailed).....	5,032

## INSTRUMENTS

Binoculars.....	113	Radios, sending and receiving, stat.....	105
Box locators.....	81	Radios, sending and receiving, walkie-talkies.....	72
Cameras.....	496	Recorders, speed.....	18
Detectors, fall out.....	1	Recorders, traffic.....	395
Detectors, vehicle.....	26	Recorders, traffic w/loop detector.....	92
Levels.....	645	Recorders, water level graph.....	1
Micro-wave measuring units.....	4	Recorders, tape.....	8
Print copiers.....	7	Transits.....	632
Projectors.....	31	Truometers.....	32
Radios, receiver sets.....	6		
Radios, sending and receiving, vehicle mounted.....	412		



The new equipment listed below, and included in the above lists, was purchased to replace obsolete and worn out equipment, and to meet the need for additional equipment.

## GENERAL

Blowers, tractor mounted, snow.....	1	Ploughs, reversible.....
Blowers, walking type, snow.....	2	Ploughs, vee.....
Blowers, truck mounted, snow.....	1	Pumps, dispensing.....
Chippers, wood.....	2	Removers, paint line.....
Compressors.....	4	Rollers.....
Cranes, truck attached.....	1	Sandspreader bodies.....
Graders, power.....	15	Scales, highway.....
Hydraulic units, electric.....	25	Snowmobiles.....
Hydraulic units, full.....	40	Sprayers, weed.....
Lifts, aerial.....	1	Swamp buggies.....
Mud jacks.....	1	Trailers.....
Plants, generating power.....	1	Trucks.....
Ploughs, one way.....	100	Wings, truck mounted, right.....

## INSTRUMENTS

Binoculars.....	7	Radios, sending and receiving, vehicle mounted.....
Cameras.....	46	Radios, sending and receiving, stat.....
Levels.....	11	Radios, sending and receiving, walkie-talkies.....
Micro-wave measuring units.....	2	
Radios, receiver sets.....	3	

## OFFICE SERVICES SECTION

## S. C. Booth, Superintendent

The Office Services Section procures, and distributes throughout the Department office supplies, furniture, office equipment, stationery and medical supplies. It produces manuals, manual revisions etc. from the copy and distributes them to appropriate recipients.

This Section is organized into several operating units, each with clearly designated functions and responsibilities. The units immediately connected with the steady stream of D.H.O. requests for office supplies and services are the Stationery Stock and Office Equipment, Forms Control, Postal, Manuals Control, Whiteprint and Photographic and Offset Reproduction Units.

The number of supplies and services afforded by the Office Services Section is shown by the volume of requests processed during the year.

## 1. Stationery Stores and Equipment

Requisitions processed (averaging 6 items per requisition)..... 23

## 2. Forms Control Unit

Initiated in October, this Unit has been instrumental in reducing the overall number of forms in use by 210.

## 3. Postal Unit

Total incoming post, including registered mail..... 367

Total outgoing post..... 478

#### 4. Manuals Control Unit

The Unit issued 6,336 copies of procedural manuals, the majority to Departmental personnel. It also maintains a mailing list and, during the fiscal year, processed 239 requests for printing and mailing revisions needed to update existing manuals.

With the exception of those restricted to Departmental use, complimentary copies of manuals are issued on request to Ontario Provincial Departments, Federal and State Highway Departments and University Libraries.

Unrestricted manuals are also available to contractors, municipalities and others engaged in highway construction.

#### 5. Whiteprint and Photographic

Requisitions processed 20,774 which included reproducing over 4,100,000 square feet of whiteprints and 38,400 negative and positive prints.

#### 6. Offset Reproduction

Requisitions processed 6,691 which included reproducing over 14,500,000 impressions from 66,918 printing plates.

### SPECIAL SERVICES SECTION

#### C. S. Moase, Manager

The Special Services Section maintains liaison between the Department of Highways and the Department of Public Works in all matters pertaining to buildings, building sites and office and shop accommodation. Telephone, teletype and radio facilities come under the Section's authority as does the administration of Service Centres on controlled access highways.

### SERVICE CENTRES

The Section administers the Department's policy for the selection, development, leasing and subsequent inspection of service centres and the selection and development of "safety rest areas" on controlled access highways. At the conclusion of the 1965-66 fiscal year, fifteen service centres had been built on the Macdonald-Cartier Freeway and contracts had been awarded for two additional sites scheduled to open during the spring of 1967. During the year, tenders were called for the two remaining sites on the Freeway and construction of these centres will be co-incident with the highway construction between Gananoque and Brockville. Completion is not expected before the spring of 1969.

Use of service centres continues to exceed expectations and many of the lessees have had to expand their facilities to cope with the peak volumes of summer traffic. This has been particularly true at the original eight sites where renovation and expansion have become frequent.

The two service centres located on Highway 400 are giving satisfactory service except that on busy summer weekends they are badly overcrowded. Unfortunately, as they are located within interchange quadrants, they cannot be enlarged. Therefore, two additional centres are being built and their completion, scheduled for 1966 should greatly relieve pressure on the existing sites. Nine picnic areas adjacent to existing

service centres on the Macdonald-Cartier Freeway were extensively used during the summer of 1965. Development of remaining picnic sites, including two on Highway 400, is nearing completion and the majority will be open during the coming season. Improvement of picnic areas is a continuing program and during 1966 additional tree planting, clearing, seeding and mulching will be done. Tenders for construction of toilet facilities at ten of the sites have been called.

Investigation of the need for "safety rest areas" continued. These areas will provide water, picnic tables and comfort stations. Suitable sites have been selected for some and preliminary work has begun. Other sites are being selected. The feasibility of locating two map study areas east and west of Toronto on the inbound lanes of the Macdonald-Cartier Freeway is being explored.

## COMMUNICATIONS

During 1965-66 the Section processed a total of 2,816 communication requests. The teletype service handled a total of 213,480 messages during this period.

### RADIO

Three highly sophisticated radio systems were completed in Fort William, Sault Ste Marie and Kenora.

New 200 ft. radio towers were installed at Beaverton (Toronto District), Bowlin Green (Stratford District) and Denbigh (Bancroft District) because boundary changes necessitated additional radio coverage. All districts now have radio systems.

A propagation survey and specifications were completed for equipment to replace the rented system in the Kingston District with a Department-owned radio system having new techniques designed to give greater efficiency. This system is scheduled for completion in October 1966.

### TELEPHONE

Installation of automatic switchboard facilities in the Cochrane, London and Kingston offices has improved the telephone service.

The automatic switchboard at Chatham District Office was replaced with a new automatic board having superior capabilities and the automatic switchboard at Huntsville District Office was modified by the installation of a new console position.

An order was placed for the installation of a model 756 automatic switchboard at North Bay District Office.

W.A.T.S. (Wide Area Telephone Service) was installed at the Bancroft District Office although delayed because the telephone company lacked cable.

### PUBLIC ADDRESS AND INTERCOM

A combination public address and intercom system was installed at Winona Garage (Hamilton District).

## ACCOMMODATIONS AND BUILDINGS

All Department of Highways space requirements are under constant review by the accommodation staff. Arrangements are made with the Department of Public Works for added leased space and new buildings. This year it was necessary to lease an additional:

5,500 sq. ft. of office space at Toronto to accommodate the office staff of Central Regional Engineering Surveys and Traffic and Planning Studies, and 575 sq. ft. of office space at Thistletown to accommodate staff of the recently formed Historical Research Section.

Temporary use was made of various residences, acquired for the reconstruction of the Macdonald-Cartier Freeway across metropolitan Toronto, to provide accommodation for field research groups and construction field offices.

The Chatham District Office was moved to new quarters on Keil Drive (Highway 2), a location more convenient to the present garage facilities.

Application was made to Treasury Board for:

1. Construction of an extension to the central building at Downsview.
2. Construction of a new administration building at North Bay.
3. Leasing of additional office space at North Bay—district and regional offices. Also additional space at New Liskeard district office.

In the administration building at Downsview, a new kelsh stereo-plotting room was designed and constructed.

Additional darkrooms were designed and constructed for the reproduction-white-print unit. Construction of a new administration building in Kingston was completed during 1965 and a portion of the Regional staff was relocated there. The remaining Regional staff and the District Office staff will also be moved to this building in the near future. Construction of a bailey bridge and steel bending building at the Department's Sheppard Ave. and Highway 400 patrol yard site proceeded this year and completion is expected in the summer of 1966.

A total of eighteen requests for new buildings was submitted to the Treasury Board and various preliminary architectural designs and plans were prepared by the Section's drafting staff and recommended to the Department of Public Works.

Under arrangements with the Department of Public Works and Treasury Board eighty-one salt sheds and thirty-two temporary patrol offices were constructed under the supervision of the Section.

During the year, approval was received for the Section to build thirty-nine patrol garages in various locations throughout the Province. This patrol garage construction program is approximately 50% complete and all buildings are expected to be ready for occupancy by the fall of 1966. The erection of various specialized buildings or facilities was undertaken by the Section among them, the Thorold Tunnel Field Office building, the Salt Test Wheel Facility at Downsview and the Permanent Traffic Counter buildings at two locations on the Macdonald-Cartier Freeway.



## SUPPLY SECTION

### R. W. Rawlings, Superintendent

The Supply Section provides material purchasing and distribution services for the Department. This section comprises three basic functions. They are: the purchasing material control and central stores warehousing. A complete bailey bridge service is included in the central stores warehouse.

The Purchasing Office buys most of the material for maintenance and construction. This service is provided for all Districts and Sections and sources of supply are determined through a competitive tender system. Suppliers are asked through newspaper advertising to register their names to receive tender packages for supply contracts. A register is kept on each item required by the Department. Supply contract openings may be attended by any bidder. The Purchasing Office issues about 10,000 purchase orders each year for a total value of about \$30,000,000.

This year, it was decided to require contractors themselves to supply a limited range of products on their construction contracts in the expectation that this will relieve the Department of accounting difficulties. No adverse effect on either the prices of the material or the sources of supply is expected to result.

Central Stores is a large material distribution warehouse serving all Districts and Sections at which a wide range of material is carried. Materials demanding uniform quality are shipped from Central Stores, and overnight delivery service is maintained to most Districts. A rigid control of specifications and quality is maintained. The average inventory at Central Stores totals about 1½ million dollars; the annual volume of shipments approximates 2½ million dollars. In addition to the distribution of material, Central Stores provides a complete Bailey Bridge service. All component parts shipped for erection have been reconditioned and tested. The use of these sectional bridges is extensive, covering most areas of the Province. The service is of particular value in providing detours at construction sites and in emergencies arising from floods and washouts. Bridges are loaned to municipalities on a short-term basis. A stockpile of component parts and a repair and reconditioning workshop are maintained in each of five regional depots. Construction of a new workshop and warehouse began last year and its completion is expected during the summer of 1966.

The Material Control Unit arranges disposal of all surplus and obsolete equipment and material mostly through auction. This unit catalogues potentially useful repair parts and material which are then made available for use anywhere within the Department. Revenue from sale of obsolete equipment and supplies totals about \$350,000.00 per year.

## TENDERS SECTION

### G. H. Garrett, Manager

The Tenders Section processes all tenders on engineering projects, supply contracts, obsolete equipment and material sales, property sales, well drilling contracts, photography contracts and special services projects.

The Section arranges formal public openings of tenders on all engineering projects and for public attendance at all tender openings; distributes all informational tender

forms, tendering material and keeps a register of contractors and suppliers; advertises all lettings of contracts, auction sales, expropriation notices, supply contracts, sales of obsolete equipment, material sales, the requirements for Districts and Sections and processes all advertising accounts.

The Section collects and does the accounting for such fees that are levied on tendering material and those for the sale manual on general condition and standard specifications of the contract which is available to the public in a reduced size. The manager or his assistant acts as secretary at the weekly meetings of the Property Approval Committee.

During the 1965-66 fiscal year, the Tenders Section issued approximately 1,784 advertising orders for 2,796 advertisements. Total cost of advertising was \$87,728.00.

Tenders were called as follows:

(A) ENGINEERING CONTRACTS	
Contracts processed.....	466
Contracts awarded.....	439
Tendering material released (plans, profiles, etc.).....	3,974
Net tenders processed.....	1,731
Average number of bids per contract.....	3.71
(B) ENGINEERING CONTRACTS	
Invitation bids (contracts less than \$10,000.00 in value)	
Invitation contracts processed.....	44
Tendering material released.....(Sets)	467
Net tenders processed.....	140
Average number of bids per invitation contract.....	3.18
(C) SPECIAL SERVICES CONTRACTS	
Invitation bids (contracts less than \$10,000.00 in value)	
Invitation contracts processed.....	98
Tendering material released.....(Sets)	1,001
Net tenders processed.....	264
Average number of bids per invitation contract.....	2.693
(D) PROPERTY SALE TRANSACTIONS	
(Public tender)	
Sales processed.....	21
Net tenders processed.....	42
Average number of bids per sale.....	2.00
(E) MATERIAL REQUIREMENTS	
Supply contracts and enquiries processed.....	3,971
Net tenders processed.....	14,814
Average number of bids.....	3.73
(F) OBSOLETE MATERIAL SALES	
Number of sales processed.....	33
Net number of tenders processed.....	165
Average number of bids per sale.....	5.00
(G) WELL DRILLING CONTRACTS	
Number of contracts processed.....	3
Net number of tenders processed.....	7
Average number of bids per contract.....	2.33

## (H) PHOTOGRAPHY CONTRACTS

Number of contracts processed.....	1
Net number of tenders processed.....	4
Average number of bids per contract.....	4.00
TOTAL EXPENDITURE.....	\$130,165.22
GROSS REVENUE (sale of tendering material).....	32,320.00
REFUNDS.....	650.00
NET REVENUE (sale of tendering material).....	31,670.00
GROSS REVENUE (sale of specification manuals).....	2,840.00
REFUNDS.....	15.00
NET REVENUE (sale of specification manual).....	2,825.00
TOTAL NET REVENUE (all items).....	34,495.00

**RIGHT-OF-WAY DIVISION****LAND SURVEYS SECTION****W. D. Ratz, O.L.S., P.Eng., Superintendent**

The Land Surveys Section develops and formulates policies and procedures for legal land surveys, plan preparation and registration and associated functions affecting the surveying organization of the five regional offices which form an integral part of the Right-of-Way Division.

In addition to preparing all recommendations for Orders-in-Council necessary for the designations, closings, reversions or transfers of highways, the section, by review maintains a uniform surveying and drafting operation in the regions; develops and co-ordinates new electronic computing procedures; directs control surveys and provides professional and technical guidance to the regional staff.

Through the regional offices, registration was obtained for 1,821 plans in the proper registry and land titles offices during the fiscal year.

The table in appendix 5 outlines the various types of plans prepared by the regional land surveys units. The plans are listed by type and grouped according to function. Included in the table are the number of plans and the total mileage of each type.

During the fiscal year 188.87 miles of highway were designated as controlled-access highways. This figure includes the designation of:

1. St. Thomas By-Pass Extension.
2. Stoney Creek Expressway.
3. Freelon By-Pass.
4. Sudbury to Timmins.
5. Peterborough By-Pass.

The total mileage of controlled-access highways in the province now stands at 1,775.36. Three interchange areas and the widened right-of-way of highway 27 between Richview Side Road and the Queen Elizabeth Way were also designated which did not, however, increase the total mileage.

The Land Surveys Section conducted one training course for field personnel during the year. The course was attended by 23 candidates. Land surveys qualifying examinations for field and drafting staff were tried by 141 candidates of whom 92 passed and 6 passed with supplementals. The apprentice program for Ontario Land Sur

veyors is being continued by this section and during the year four apprentices passed the final examinations.

Co-ordinate control surveys are in progress on sections of highways throughout the Province. This survey operation employs electronic survey instruments capable of measuring within a fraction of an inch any distance from 50 feet to several miles, and a transit which allows direct reading on angular measurements to one second.

In co-operation with Topographical Surveys, Department of Mines and Technical Surveys, Ottawa, a net of control monuments with geodetic values has been established between Hamilton and Galt on Highways 5, 8, 52, 97 and 401. These monuments are linked to the existing Toronto-Hamilton networks and will provide a basis for co-ordinate control surveys which will prove beneficial to the Department in all engineering and surveying work.

Appendices to this report give details of controlled-access highway designations and assumptions, designations, reversions and transfers of sections of the King's highway, secondary highway and tertiary road systems.

### TOTAL NUMBER OF PLANS AND MILEAGE

TYPE	NOMENCLATURE	NO. OF PLANS	MILEAGE
PLAN TYPES A-G INCLUSIVE—ACQUISITION OF LANDS			
"A"	Land plan.....	783	307.01
"B"	Amended land plan.....	59	5.39
"C"	Limited interest plan.....	66	32.29
"D"	Plan of abandonment.....	4	0.94
"E"	Crown land plan.....	94	119.80
"F"	Amended crown land plan.....	8	—
"G"	Crown land abandonment plan.....	28	22.54
PLAN TYPE I-M INCLUSIVE—ASSUMPTION OF EXISTING HIGHWAYS			
"I"	Preliminary assumption plan.....	34	37.87
"J"	Amended preliminary assumption plan.....	1	—
"K"	Assumption (replacing).....	102	184.98
"L"	Assumption plan.....	45	14.25
"M"	Amended assumption plan.....	12	—
PLAN TYPES N-P INCLUSIVE—DESIGNATIONS OF HIGHWAYS			
"N"	Plan of a proposed highway.....	21	79.73
"O"	Highway plan.....	63	502.07
"P"	Controlled-access highway plan.....	1	1.02
PLAN TYPES Q-T INCLUSIVE—TRANSFER AND CLOSING OF HIGHWAYS			
"Q"	Reversion plan.....	1	0.78
"R"	Transfer plan.....	58	34.32
"S"	Road closing plan.....	45	21.98
"T"	Road closing plan (Ontario Municipal Board).....	5	—
PLAN TYPES H AND U-X INCLUSIVE AND OTHERS— MISCELLANEOUS AND SPECIAL PLANS			
"H"	Navigable waters plan.....	7	0.15
"U"	Plan to illustrate description (including description reference).....	282	52.91
"V"	Survey plan.....	14	—
"W"	Plan of Indian lands.....	2	1.63
"X"	Connecting link designations and agreements.....	58	83.43
	Miscellaneous plans.....	28	8.16
TOTALS.....		1,821	1,511.25



## PROPERTY SECTION

R. W. Bond, Superintendent

The Property Section acquires property and property rights required for highway purposes, and settles claims arising from such acquisition. It also manages and disposes of land and buildings which are surplus to highway requirements.

During the year, 3,071 new agreements were negotiated. The carry-over from the previous year of 703 unpaid agreements added to the number of new agreements made a total of 3,774 to be paid. Of this total 3,014 were paid in the amount of \$9,275,014.62. Additional expenditure on the Kitchener-Waterloo and Lakehead Expressways raised the amount to \$12,248,123.16.

At the close of the fiscal year, there were 2,804 property owners with whom agreements had not been negotiated compared with 2,285 at the same time last year. Requests to purchase property involving 3,375 new owners were received during the year compared to 2,807 in the previous fiscal year.

The purchase of property for the Macdonald-Cartier Freeway (Highway 401), Windsor to Quebec border, exclusive of the current widening project between Highways 48 and 27, has involved a total of 5,383 owners to date. Negotiated agreements total 5,363. Twenty are still unsettled.

The purchase of property for the widening of the Macdonald-Cartier Freeway (Highway 401), from Highway 48 to Highway 27 continues. A total of 151 properties including 24 buildings were purchased during the fiscal year, the expenditure involved being \$2,507,900.00. To date 496 properties including 238 buildings have been purchased, at a cost of \$8,963,000.00.

A total of 225 buildings have been removed or demolished by the methods indicated below:

1. Invitation tender.....	126
2. Public auction.....	57
3. Demolished by highway contractor.....	13
4. Public tender.....	21
5. Demolished under agreement.....	2
6. Direct sale.....	6
TOTAL.....	225

Twenty-nine applications were made to the Ontario Municipal Board for determination of compensation which, added to the carry-over of 18, gives a total of 47, categorized as follows:

1. Appointments heard and awards made.....	13
2. Appointments heard and judgment reserved.....	1
3. Settlements made, applications or appointments cancelled.....	10
4. Appointments not yet heard.....	14
5. Applications awaiting the granting of appointments.....	9
TOTAL.....	47

Before purchase all properties were appraised by D.H.O. appraisers. In addition 206 appraisals were completed by independent fee appraisers.

At the close of the fiscal year, 1,197 properties, which were recorded as surplus to D.H.O. requirements, were under various stages of processing for disposal. Disposal of 471 properties was completed during the year.

Revenue from the sale of surplus property totalled \$236,792.81, and revenue from leased properties amounted to \$192,599.33.

REGIONAL SERVICES MANAGERS SECTION

Each Regional Services Manager reported directly to the Director of Services on the activities of the property acquisition, land surveying and administrative groups in his Region.

Following is a list of Regional Services Managers and the Region to which each was assigned.

- 1. D. F. Walton.....South-western
- 2. H. Aron ..... Eastern
- 3. M. W. Robinson.....Central
- 4. D. W. Baird .....Northern
- 5. C. E. Warner .....North-western

## CONSTRUCTION OF THE TRANS-CANADA HIGHWAY

Including Ottawa Queensway, 1965-66

**T. C. MUIR, P.Eng., Contract Control Engineer**

This year there was a decrease in the construction work on the Trans-Canada Highway from last year.

Grading completed this year was approximately 28 miles as compared to 39 miles the previous year. Paving completed this year was approximately 27 miles as compared to 54 miles the previous year. Six new structures were completed compared to five last year.

On the Ottawa Queensway work was carried out over a distance of 1.0 miles. The structure over the Rideau Canal was completed and concrete pavement placed from O'Connor Street to Concord Street. Reconstruction of the South half of Alta Vista Drive interchange was started. Good progress was made on the structures and concrete paving contract from East of Main Street to Hurdman Bridge. This contract fills in the last gap on the Queensway.

In the Kingston District the grading of the Madoc by-pass has reached an advanced stage.

In the Port Hope District the Beaverton by-pass was completed.

In the Huntsville District from Gordon Bay to Hayes Corners, 6.6 miles was reconstructed and paved with Hot Mix to bring this section to Trans-Canada standards.

In the Sault Ste. Marie District heavy construction is being carried out from 8.82 miles north of Secondary Highway 563 northerly to Mica Bay.

In the Fort William District, progress in the reconstruction between English River and Ignace covering 36 miles was slower than anticipated due to exceptionally adverse weather. It was possible however, to pave this section over half its length by the end of the construction season.

In the Kenora District grading and granular base was completed from Kenora town limits easterly for 5.27 miles. The work of hot mix paving on this section was 60 per cent complete by winter.

The total work on the Trans-Canada Highway completed to the end of the year was:

Grading and culverts.....	1,249.10 miles
Bituminous hot mix pavement.....	1,161.57 miles
Permanent bridges and structures built.....	172

GRADING AND CULVERTS

DISTRICT	Hwy.	LOCATION	TOTAL MILES	COMPL. PREVIOUS YEARS	COMPL. THIS YEAR
Ottawa	Q'way	Main Street easterly.....	0.49	0.29	0.10
Kingston	7	Madoc by-pass.....	3.09	—	2.94
Port Hope	12	Beaverton by-pass.....	6.96	3.62	3.34
Huntsville	69	Gordon Bay to Hayes Corners.....	6.64	—	6.64
Sault Ste. Marie	17	From 8.82 mi. north of Secondary Hwy. 563 northerly to Mica Bay.....	11.35	—	8.17
Fort William	17	11.2 mi. west of English River westerly.....	13.52	1.50	6.00
Kenora	17	East town limits easterly for 5.2 mi.....	5.27	4.00	1.27
TOTALS.....			47.32	9.41	28.46

BITUMINOUS HOT MIX

Port Hope	12	Beaverton by-pass.....	1.56	—	1.56
Huntsville	69	Gordon Bay to Hayes Corners.....	6.64	—	6.64
Fort William	17	English River westerly.....	11.91	5.20	6.71
Fort William	17	11.2 mi. west of English River westerly 13.5 mi.....	13.50	—	5.30
Kenora	17	Kenora town limits easterly.....	5.27	—	5.27
Kenora	17	From east of Keewatin westerly.....	11.56	9.60	1.96
TOTALS.....			50.44	14.80	27.44

GRANULAR BASE (NEW GRADING)

Ottawa	Q'way	Elgin Street to Main Street.....	0.25	0.10	0.15
Ottawa	Q'way	Main Street easterly.....	0.49	—	0.29
Kingston	7	Madoc by-pass.....	3.09	—	3.09
Port Hope	12	Beaverton by-pass.....	6.96	1.60	5.36
Huntsville	69	Gordon Bay to Hayes Corners.....	6.64	—	6.64
Sault Ste. Marie	17	From 8.82 mi. north of Secondary Hwy. 563 northerly to Mica Bay.....	11.35	—	4.54
Fort William	17	From 11.2 mi. west of English River westerly.....	13.52	—	6.00
Kenora	17	East of Keewatin westerly.....	10.17	7.46	2.71
Kenora	17	Kenora east limits easterly.....	5.27	4.00	1.27
TOTALS.....			57.74	13.16	30.05

NEW BRIDGES

Ottawa	Q'way	Rideau Canal
Kingston	7	Deer Creek
Kingston	7	Madoc Creek
Port Hope	12	Whites Creek
Port Hope	12	Beaverton River
Port Hope	12	Beaverton River—County Road 15

TOTAL — 6 new bridges.



## MINING, ACCESS AND RESOURCES ROADS REPORT, 1965-66

**T. C. MUIR, P.Eng., Secretary**

### **Mining and Access Roads Committee (Interdepartmental)**

A mining and Access Roads Committee consisting of the Treasurer of Ontario as chairman and the Ministers of the following departments: Highways, Lands and Forests, Mines, and Municipal Affairs administers a fund which is voted by the Legislature in the Department of Mines' estimates for carrying out works under the Roads-to-Resources Program and under the Mining Assistance Program of the Department of Mines.

The Resources Roads Program is carried out under an agreement between the Federal Government and the Province of Ontario, and under this agreement the Department of Highways, acting as the agent for the Ontario Government, will design and supervise such program which eventually proposes an expenditure in Northern and Northwestern Ontario in the amount of \$15,000,000 by March 31, 1967. The cost of such works would be shared between the Federal Government and the Provincial Government, except in the cases wherein a private enterprise would directly benefit. In such latter case, the costs would be shared between the two governments and the private company concerned.

The following was accomplished this year:

### **NORTH BAY DISTRICT**

#### **Mining Assistance Road:**

Through the funds provided by the Department of Mines for the construction of mining access roads on a shareability with the mining corporation concerned, payment was made by the Department of Mines towards the cost of construction of 3 miles of access road into the Cleveland Cliffs of Canada-Sherman Mine. The Department provided funds in the amount of \$7,500 per mile for the 3 miles of construction.

### **NEW LISKEARD DISTRICT**

#### **Mining Assistance Road:**

Under mining assistance funds from the Department of Mines on a shareability basis with the mining corporation a new access road was constructed into the Jones & McLaughlin Iron Ore Mine, east of Highway 112 for some 5.7 miles. The previous year reconstruction was carried out over the old original road as an interim measure to expedite the construction of the huge Jones & Laughlin complex. Paving of this access road will be carried out in the 1966 construction season once again on a shareability basis with the Department of Mines under the mining assistance funds.

The fiscal year saw the completion of some 17½ miles of access road into the vast Texas Gulf Sulphur Mine 4.4 miles of which were constructed solely by the Department of Highways' funds as a secondary highway, 9.1 miles were shared between the mining corporation and the Department of Mines under the mining assistance funds wherein the Department of Mines shared at a cost of \$7,500 per mile and finally the mining corporation completed the remaining 4 miles totally at its own expense.

Also under the mining assistance funds a small contribution was made in the cost of the Rusty Lake Mining Corporation access road and in addition to this a contribution on a 50-50 basis was made on the construction of the 4 miles of the Genex Mines Limited access road.

#### SUDBURY DISTRICT

##### Resources Road-The Flack Lake Road:

This road was added to the roads-to-resources agreement between the Federal and Provincial Governments in October 1963 to construct a road at approximately 8 miles north of Elliot Lake on a new location to Highway 129, a distance of approximately 38 miles. This fiscal year saw the completion of this project as far as Secondary Highway 546 together with the structure of the Boland River and clearing was completed from Highway 546 towards Highway 129 for a distance of 15 miles.

#### SAULT STE. MARIE DISTRICT

##### Mining Assistance Road:

Through the mining assistance funds provided by the Department of Mines that Department shared equally with the Willroy Mines Limited in the cost of the construction of its 2 miles of access road in the Manitouwadge area.

#### FORT WILLIAM DISTRICT

##### Resource Road-Savant Lake southerly to Ignace Highway 17:

This fiscal year saw the completion of the resource road on Savant Lake to Highway 17 at Ignace a total length of approximately 80 miles. This project started in October 1959 and was completed and open to traffic on October 14th, 1965 with the completion of the English River bridge and a crushed gravel contract to provide crushed gravel for the driving surface was underway at the latter part of this year, and the placing of the gravel will be completed in early 1966.

##### Resource Road-Lingman Lake Road-Central Patricia northerly:

This road is also a project under the Roads-to-Resources Agreement the cost being paid equally between the Federal Government and the Province of Ontario and during this fiscal year 6.9 miles were constructed to complete the project as far as the Otokwin River and a study was carried out this year in respect to the type of crossing involved at this major river. A crushed gravel contract was completed this year for placing a gravel driving surface on this road from Central Patricia to the Otokwin River.

##### Mining Assistance Road:

Contribution was made this year under the mining assistance funds on a 50-50 basis towards the cost of construction of approximately 15.1 miles for an access road for the Zenmac Mines Limited to give access from their mining operation to their mill site on Highway 17 and the C.P.R.

### RESOURCES ROADS, 1965-66

Financed Partially by the Province under the  
Federal-Provincial Roads-to-Resources Agreement

DISTRICT	LOCATION	YEAR BEGUN	TOTAL MILES	MILES COMPL. PREVIOUS YEARS	MILES COMPL. 1965-66	MILES TO COMPL.
New						
Liskeard	Foleyet west.....	1958	34.0	34.0	—	—
Sudbury	Flack Lake Road.....	1963	38.0	10.5	—	27.5
Sault Ste.						
Marie	Chapleau east.....	1958	26.0	26.0	—	—
Fort						
William	Nakina to Terrier Lake.....	1959	47.0	47.0	—	—
	Savant Lake to Hwy. 17.....	1959	79.6	74.1	5.5	—
	Hwy. 17 to vicinity of Cheeseman Lake.....	1959	74.5	64.5	10.0	—
	Central Patricia, northerly to Otoskwin River.....	1962	37.0	30.1	6.9	—
Kenora	Minaki south.....	1959	21.5	21.5	—	—
	TOTALS.....		357.6	307.7	22.4	27.5

### MINING AND ACCESS ROADS, 1965-66

Financed Partially by the Province

During this fiscal year the Department of Mines through the administration of the Mining and Access Roads Committee contributed \$87,059.05 toward the cost of five access roads servicing each of the Zenmac Metal Mines Limited, the Cleveland Cliffs of Canada-Sherman Mine, the Genex Mines Limited, the Rusty Lake Mining Corporation and Willroy Mines Limited.

The financial shareability on behalf of the Department of Mines in each of the above cases would either be on a straight 50-50 basis with the corporation concerned or on a fixed contribution by the Department not to exceed \$7,500 per mile whichever is the lesser.

Construction work is being carried out on the two large projects, the Texas Gulf Sulfur Company access road and the Jones & Laughlin Adams Mine access road and these two large projects will be completed in the construction year of 1966 and will be eligible for a type of subsidy through the Department of Mines as aforementioned.

### CONTRACT WORK FOR 1965-66

#### T. C. MUIR, P.Eng., Contract Control Engineer

During 1965-66 capital construction contracts were completed on 465 miles of grading, 486 miles of hot mix paving and 95 structures with 315 capital contracts being completed along with 148 maintenance contracts.

In the fiscal year 1965-66 286 capital construction contracts and 153 maintenance contracts were awarded and this new capital work covered 380 miles of grading, 327 miles of hot mix paving and 86 structure of various types.

Although this year saw a 3.7% decrease in the number of contracts of all types

awarded there was a considerable increase in the monetary value of the contracts awarded over the previous year to the extent of some 39.8%. This large percent increase in the total value of the contracts awarded this year was due to the awarding of the very large contracts on the Macdonald-Cartier Freeway (Toronto by-pass) and the Thorold Tunnel.

Although the Department of Highways Qualification Procedures were inaugurated in 1957 it was not until the past three years that penalties were imposed upon the contractors who did not perform work in accordance with these procedures and this year again saw an acceleration in the number of penalties imposed to the extent that 148 warning letters have been sent to delinquent contracts advising them of the Departments' concern with their work and 112 reductions have been found necessary to be made in the contractors' rating. With the qualification requirements being applicable to practically all capital construction contracts and a very large percentage of maintenance contracts, it was indicated that 70% of all contracts awarded in



### Northern Ontario Road System — Twenty years of Progress





1965 in respect to the number of contracts awarded and 98% in respect to the monetary value of all contracts so awarded came under the qualification procedures.

Once more the installation of liquidated damages in over 95% of all contracts advertised has proved a very excellent medium toward having contracts finished within the completion date set forth in the contract.

Where time does permit proper engineering and calling for advertisement it is the Departments' policy to publicly advertise its contracts, however, where time does not permit a reasonable period for pre-engineering and advertising the Department would adopt the principle of an Invitation Bid. The number of contracts called under this method were reduced from the previous year on capital construction work with only 46 contracts being called by an Invitation Bid this year as compared to 53 contracts so invited the previous year.

In respect to work required by the Special Services Branch concerning such operations as plumbing, heating, ventilation, electrical work, garage doors, etc., the Invitation Bid principle was adopted quite largely owing to the fact that the nature of the work is quite specialized and many local contractors in small centres are quite capable of carrying out the work of this type and therefore the people in these respective trades are invited in large numbers to bid on these rather small and localized projects. The Invitation Bid principle in these cases therefore best served the purposes both of the Department and the small local contractors.

## TYPE OF WORK

### Contracts Awarded 1965-66

MAINTENANCE	TOTAL
Prime dust layer.....	7
Crushed gravel (including 37 capital contracts).....	85
Hot-mix patching.....	21
Surface treatment.....	8
Winter sanding.....	21
Screened sand.....	18
Bridge painting.....	7
Calcium chloride apply.....	6
Resurfacing.....	9
Tree removal.....	8
Miscellaneous.....	2
<b>TOTAL.....</b>	<b>192</b>

### CONSTRUCTION

Concrete paving.....	1
Grading and culverts.....	98
Grading and hot-mix paving.....	49
Hot-mix paving.....	20
Structures.....	13
Structural steel.....	12
Pressed steel.....	3
Miscellaneous.....	51
<b>TOTAL.....</b>	<b>247</b>
<b>GRAND TOTAL — MAINTENANCE, CONSTRUCTION.....</b>	<b>439</b>

## BRIDGES COMPLETED DURING 1965

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	DISTRICT
Albany River (Rat Rapids).....	Composite steel beam	100'	Hwy. 599 Savant Lake—Central Patricia	—	—	—	Kenora	19
Albany River (Main channel)	Composite steel beam	100'	Hwy. 599 Savant Lake—Central Patricia	—	—	—	Kenora	19
Albany River (overflow)	Concrete rigid frame	45'/45'	Hwy. 599 Savant Lake—Central Patricia	—	—	—	Kenora	19
Aultsville Road	Prestressed concrete beams, semi-continuous	37'/67'/67'/37'	Hwy. 401 Brookville—Cornwall	Osnabruck	33	II	Stormont	9
Badesdawa River	Cresosoted timber	5 @ 15'	Hwy. 599 Central Patricia Otoskwin River	—	—	—	Kenora	19
Batteaux Creek	Concrete rigid frame open culvert	20'	Hwy. 91 Stayner—Dunton	Nottawasaga	24-25	VI	Simcoe	5
Bear Creek	Timber trestle	8 @ 20' 2 @ 17'-3"	Hwy. 65 at Elk Lake	James	5	V	Timiskaming	14
Beaverton River	Post-tensioned deck slab, continuous	38'/45'/38'	Hwy. 12 Whitby—Orillia	Thorah	10-11	IV	Ontario	7
Beaverton River..	Post-tensioned deck - slab, continuous	38'/45'/38'	County Road 15 Beaverton—Hwy. 12	Thorah	11	IV-V	Ontario	7
Big Creek	Post-tensioned hollow deck slab continuous	45'-6"/60'/45'-6"	Hwy. 3 Town of Delhi	—	—	—	Norfolk	2
Blackhorse Crossing..... C.N.R. and C.P.R. Overhead	Welded steel plate girder, simply supported	64'-4½"/3 @ 65' 64'-4½"	Hwy. 9 Schomberg—Orangeville	Tecumseth	4	I	Simcoe	6
Boland River	Welded steel plate girder, continuous	36'-3"/54'/36'-3"	Hwy. 639 Hwy. 108—Hwy. 546	No. 157	—	—	Algoma	17
Brinston Road	Concrete boat-type, continuous	38'/66'-3"/66'-3" 38'	Hwy. 401 Johnstown—Que. Boundary	Matilda	18-19	I	Dundas	9

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	DISTRICT
Bronson Avenue Bridge No. 18.....	Concrete rigid frame, boat-type	78'	Ottawa Queensway	—	—	—	Carleton	9
Bruce Creek.....	Concrete rigid frame, culvert type	22'	Hwy. 11 Smooth Rock Falls-Kapuskasing	Fauquier	1	I-II	Cochrane	16
Carsonby Creek (Mud Creek).....	Concrete rigid frame	30'	Hwy. 16 Johnstown-Ottawa	N. Gower	9	II	Carleton	9
Clappison's Corners C.P.R. Overhead	Welded plate girder, continuous	56'/72'/56'	Hwy. 6 Jet Hwy. 2 Jet Hwy. 5	W. Flamboro	27	II	Wentworth	4
Clay Creek.....	Concrete rigid frame	47'	Hwy. 40 Chatham-Sarnia	Sombra	1	XIV	Lambton	1
C.N.R. Overhead at Ernestown.....	Welded steel plate girder, continuous	45'/52'/45'	Hwy. 133 Hwy. 33-Hwy. 401	Ernestown	19	II	Lennox and Addington	8
C.N.R. Overhead at Washago..... (widening)	Steel rigid frame	83'-6 1/4"	Hwy. 11 Orillia-Gravenhurst	Orillia N.	9	XIV	Simcoe	11
C.N.R. Overhead.....	Prestressed concrete beams, simply supported	45'/75'-4' 70'/45"	Hwy. 40A Sarnia-Hwy. 402	Sarnia	15-16	IV	Lambton	1
County Road No. 5 Underpass.....	Prestressed concrete beams, semi-continuous	37'/66'/66'/37'	Hwy. 401 Johnstown-Que. Boundary	Matilda	7	I	Dundas	9
County Road No. 8 Underpass.....	Concrete "T" Beam, continuous	40'/66'/66'/40'	Hwy. 401 Johnstown-Que. Boundary	Williamsburg	18	I	Dundas	9
County Road No. 20 Overpass.....	Post-tensioned hollow deck slab, continuous	33'/49'-1" 33'	Q.E.W. Hamilton-Niagara Falls	Louth	16-17	I and B.F.	Lincoln	4
County Road No. 26 Underpass.....	Prestressed concrete beams, continuous	41'-6'/75'-6" 75'-6'/41'-6"	Hwy. 401 Toronto-Kingston	Brighton	34	II	Northumberland	7
C.P.R. Subway at Bala.....	Steel low girder	54'-6"	Hwy. 69 Hwy. 11-Hwy. 103	Wood	33	VII	Muskoka	11
C.P.R. Overhead at Bolton.....	Concrete boat type, continuous	2 @ 35'/6 @ 44'	Hwy. 50	Albion	5	VI-VII	Peel	6
C.P.R. Subway at Cooksville (Ext.)	Through plate girder simply supported	48'/43'	Hwy. 10 N. of Cooksville	Toronto	15-16	I N.D.S.	Peel	6

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOF	CONCESSION	COUNTY OR DISTRICT	DISTRICT
C.P.R. Subway at Palgrave.....	Steel low girder	77'-6"	Hwy. 50 Palgrave-Bolton	Albion	22	VI	Peel	6
Credit River (widening)	Concrete rigid frame	30'	Hwy. 136 Alton-Orangeville	Caledon	23	III	Peel	6
Crystal River....	Steel beams, wooden deck	19'-6"/30'/19'-6"	Hwy. 599 Ignace-Savant Lake	—	—	—	Kenora	19
Deception Creek (Steelehorns Bridge)	Crescoted timber	6 @ 15'	Township Road	Clute	26	X-XI	Cochrane	16
Deer Creek	Concrete rigid frame	34'	Hwy. 7 Madoc By-Pass	Madoc	3	V	Hastings	8
Donegana River	Single single bailey	40'	Hwy. 560 To Gogama	Garvey	—	—	Sudbury	14
Dredge Creek	Concrete rigid frame	30'	Hwy. 87 Town of Harriston	—	—	—	Wellington	3
East Highland Creek.....	Twin rigid frame box culvert	2 @ 2' x 14'	Hwy. 401 Toronto By-Pass	Scarboro	21	II	York	6
Eels Creek	Concrete rigid frame	30'	Hwy. 620 Hwy. 28-Apsley	Anstruther	33	I	Peterborough	10
Elgin Street Bridge No. 23..	Concrete rigid frame	68'	Ottawa Queensway	—	—	—	Carleton	9
English River.....	Welded steel plate girder, continuous	90'/90'	Hwy. 599 Ignace-Savant Lake	—	—	—	Kenora	19
Etobicoke Creek	Prestressed concrete beams, continuous	51'/92'/51'	Hwy. 10 S. of Brampton	Chinguacousy	4	I E. and W.	Peel	6
F-wing Drive	Prestressed concrete beams, semi-continuous	40'/63'/63'/40'	Hwy. 403 Brantford By-Pass	Brantford	27	II	Brant	4
Fairchild Creek, East Branch	Prestressed concrete beams	81'-6"	Hwy. 99 Lynden-Jct. Hwy. 24	Brantford	46	I	Brant	4
Fairchild Creek, West Branch	Prestressed concrete beams	81'-6"	Hwy. 99 Lynden-Jct. Hwy. 24	Brantford	45	I	Brant	4
Farren Point Road....	Prestressed concrete beams, semi-continuous	40'/74'/74'/40'	Hwy. 401 Johnstown-Que. Boundary	Williamsburg	3	II	Dundas	9



NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	DISTRICT
Fifteen Mile Creek.....	Concrete rigid frame	25'	Dev. Road 683 Hwy. 57-Hwy. 20	Gainsboro	1	VI	Lincoln	4
Furnival Road.....	Welded steel plate girder simply supported	40'/69'/69'/40'	Hwy. 401 London-Chatham	Aldborough	8-9	VI	Elgin	2
Geneva Street, St. Catharines (over old Welland Canal)	Welded steel plate girder simply supported	5 @ 75'	Hwy. 406 Connection between Geneva St. and Hwy. 406	City of St. Catharines	—	—	Lincoln	4
Grand Marais Drain	Concrete rigid frame open culvert	24'	Hwy. 2 Tilbury-Windsor	Sandwich E. and W.	85 86	III	Essex	1
Gull River and Coboconk..	Prestressed concrete core-beams, simply supported	2 @ 42'	Hwy. 35 Newcastle-Huntsville	Town of Coboconk	—	—	Victoria	7
Haileybury C.N.R. Subway..	Concrete rigid frame, slab and beams	38'	Hwy. 558 Town of Haileybury	—	—	—	Timiskaming	14
Highgate Side Road.....	Welded steel plate, girder simply supported	40'/69'/69'/40'	Hwy. 401 Chatham-London	Orford	8-9	VII-VIII	Kent	1
Hoasic Creek (W/B Lane)..	Concrete rigid frame	36'	Hwy. 401 Brockville-Cornwall	Williamsburg	23	I	Dundas	9
Hwy. 2 Interchange....	Welded steel plate girder, continuous	55'/110'/110'/55'	Hwy. 401 Gananoque East	Fr. of Leeds and Landsdowne	19	I	Leeds	8
Hwy. 2 Interchange.....	Welded steel plate girder, continuous (dual)	66'/91'-6'/80'/66'	Hwy. 403 Brantford By-Pass	City of Brantford	—	—	Brant	4
Hwy. 20 Interchange (widening)	Concrete rigid frame	2 @ 48'	Q.E.W.	Stamford	132, 141	—	Welland	4
Hwy. 21 Interchange....	Welded steel plate girder simply supported	40'/69'/69'/40'	Hwy. 401 Chatham-London	Howard	12-13	VI	Kent	1
Hwy. 24 Interchange....	Prestressed concrete beams, semi-continuous	40'/61'/70'/40'	Hwy. 403 Brantford By-Pass	City of Brantford	—	—	Brant	4
Hwy. 25 Interchange (widening)	Prestressed concrete box girder	121'	Q.E.W. Burlington-Hamilton	Town of Burlington	—	—	Halton	4
Hwy. 31 Interchange....	Concrete boat-type, continuous	40'/75'/75'/40'	Hwy. 401 Johnstown-Que. Boundary	Williamsburg	30 31	I	Dundas	9
Hwy. 76 Interchange....	Welded steel plate girder, simply supported	40'/69'/69'/40'	Hwy. 401 London-Chatham	Aldborough	18-19	VII	Elgin	2

	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	DISTRICT
Hwy. 400 and 401 Interchange Structure No. 2	37'-7½"/84'-3" 37'-7½"	Hwy. 401 Toronto By-Pass	N. York	—	—	York	6
Hwy. 400 and 401 Interchange Structure No. 3...	47'-3"/83'-6" 52'-9"	Hwy. 401 Toronto By-Pass	N. York	—	—	York	6
Hwy. 400 and 401 Interchange Structure No. 7.....	26'/42'/26'	Hwy. 401 Toronto By-Pass	N. York	—	—	York	6
Hwy. 400 and 401 Interchange Structure No. 10....	112'/134'/100'	Hwy. 401 Toronto By-Pass	N. York	—	—	York	6
Humber River at Cedar Mills (widening)	40'	Hwy. 50 at Cedar Mills	Albion	20	VI-VII	Peel	6
Hydro Canal Bridge (widening)	75'/94'/75'-7½" 33'-5½"	Hwy. 20 City of Niagara Falls	—	—	—	Welland	4
Keele Street	134'-9"/137'-9" 132'-9"	Hwy. 401 Toronto By-Pass	N. York	—	—	York	6
Kent Street Bridge No. 20...	82'-6" (Average)	Ottawa Queensway	—	—	—	Carleton	9
Kettle Creek	33'/60'/41'	Hwy. 74 Village of Bldmont	Westminster	1	VII	Middlesex	2
Kettleby Creek	2 @ 16' x 14'	Hwy. 9 Schomberg-Newmarket	King	35	IV	York	6
King Edward Overpass, Ramp 'A'	31'/47'/31'	Ottawa Approach to Macdonald-Cartier Bridge	—	—	—	Carleton	9
Lamont Creek	27'	Hwy. 91 Slayner-Duntroon	Nottawasaga	24-25	IV	Simcoe	5
Lovett Road	35'/78'/78'/35'	Hwy. 401 Toronto-Kingston	Murray	21-22	II	Northumberland	7
Madoc Creek	24'/12'	Hwy. 7 Madoc By-Pass	Village of Madoc	—	—	Hastings	8
McConnell Avenue	48'-6"/82'-5½" 82'-5½"/48'-6"	Hwy. 401 Cornwall-Lancaster	Cornwall	6-7	III	Stormont	9

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	DISTRICT
Mervins Lane	Post-tensioned concrete deck slab	38'/66'-9"/66'-9" 38'	Hwy. 401 Brockville—Prescott	Augusta	6-7	I	Leeds and Grenville	8
Metcalfe Street Bridge No. 37	Concrete rigid frame	60'	Ottawa—Queensway	—	—	—	Carleton	9
Michipicoten River	Welded steel plate girder, continuous	80'/120'/80'	Hwy. 101 Chapleau—Wawa	No. 27	—	—	Algoma	18
Millhaven Creek (widening)	Steel beams, continuous	2 @ 41'-6"	Hwy. 133 Hwy. 33—Hwy. 401	Ernestown	19	II	Lennox and Addington	8
Moir River (extension south end)	Steel beam, simply supported	30'	Hwy. 37 Belleville—Tweed	Thurlow	18	VII	Hastings	8
Mollie Creek	Single single Bailey bridge	30'	Hwy. 560 To Gogama	Benneweis	—	—	Sudbury	14
Moon River at Bala	Welded steel plate girder	112'-6"	Hwy. 69 at Bala	Wood	—	—	Muskoka	11
Moose Creek	Welded steel plate girder, simply supported	27'-6"/45'/27'-6"	Township Road (Brethour Road)	Casey	6-7	III	Timiskaming	14
North Creek (Bertrand Creek)	Welded steel plate girder	90'	Hwy. 520 Burks Falls—Magnetawan	Ryerson	5	IX	Parry Sound	11
O'Connor Street Bridge No. 22	Concrete rigid frame	60'	Ottawa—Queensway	—	—	—	Carleton	9
Opicinimika River	Double single Bailey	90'	Hwy. 560 To Gogama	Asquith	—	—	Sudbury	14
Redpath Street	Concrete deck slab	33'/50'/33'	Ottawa Approach to Macdonald-Carlier Bridge	—	—	—	Carleton	9
Saugen River (Roseborough Bridge)	Welded steel plate girder	125'	Hwy. 4 Durham—Hanover	Bentinck	56-57	II W.G.R.	Grey	5
Seine River	Welded steel plate girder, continuous	85'/110'/85'	Atikokan—Fort Frances	—	—	—	Rainy River	19
Seyvern River West Bridge (widening)	Concrete rigid frame	1 @ 35'-2" 2 @ 29'-7"	Hwy. 11 Orillia—Gravenhurst	Orillia N.	22	XV	Simcoe	11
Snelgrove Creek	Concrete barrel arch	50'	Hwy. 10 Brampton—Orangeville	Chinuaucousy	20	I E. and W.	Peel	6

NAME	TYPE	SPAN	ROAD	TOWNSHIP	LOT	CONCESSION	COUNTY OR DISTRICT	DISTRICT
Spencer Creek.....	Steel beam	40'	Hwy. 8 Town of Dundas	—	—	—	Wentworth	4
Teeswater River.....	Concrete barrel arch	54'-6½"	Hwy. 4 Wingham-Teeswater	Culross	15-16	VII	Bruce	3
Thessalon River.....	Steel beam	113'	Hwy. 17B Town of Thessalon	—	—	—	Algoma	18
Tollgate Road.....	Prestressed concrete beams, continuous	48'/79'/79'/48'	Hwy. 403 Brantford By-Pass	City of Brantford	—	—	Brant	4
Tremblay Road Bridge No. 47.....	Concrete deck slab	45'-9'/46'-6" 45'-9"	Ottawa Queensway	—	—	—	Carleton	9
Trent Canal at Fenelon Falls.....	Precast "T" beams	58'-7"	Hwy. 121 Hwy. 35-Kinmount	Town of Fenelon Falls	—	—	Victoria	7
Trent Valley Canal (widening).....	Welded steel plate girder, continuous	80'/80'	Hwy. 11 Orillia-Gravenhurst	Orillia N.	8-9	XIV	Simcoe	11
Trout Creek.....	Concrete rigid frame	34'-6"	Hwy. 7A Bethany-Cavan	Cavan	2	VIII-IX	Northumberland	7
Westbound Entrance.....	Prestressed concrete beams, simply supported	45'/86'-6"/45'	Hwy. 401 Gananoque East	Fr. of Leeds and Lansdowne	16-17	I	Leeds	8
Whites Creek.....	Post-tensioned deck slab, continuous	34'/40'/34'	Hwy. 12 Whitby-Orillia	Thorah	10-11	V	Ontario	7
Wood Creek.....	Concrete rigid frame	30'	Hwy. 2 Johnstown-Que. Boundary	Lancaster	6	I	Glengarry	9
Wright Creek (Shannons Bridge).....	Welded steel plate girder, simply supported	38'-6"/47'/38'-6"	T. L. Road	Brethour	7	I	Timiskaming	14
Wye River at Wyebridge.....	Prestressed concrete box girder	63'-1"	Hwy. 27 Barrie-Penetang'e	Tiny	93	I	Simcoe	5
York River.....	Steel beam	92'	Hwy. 62 Village of Bancroft	—	—	—	Hastings	10



## APPENDIX No. 2

**Department Expenditures on King's Highways, Secondary Highways, Tertiary Roads,  
Access and Industrial Roads, Connecting Links, Development Roads, Roads in  
Unincorporated Townships, by County and District**

**April 1, 1965 to March 31, 1966**

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>BRANT:</b>			
Highway 2	\$ 125,079.89	\$ 85,416.58	\$ 210,496.47
"    5	768.27	31,185.70	31,953.97
"    24	58,331.28	74,528.65	132,859.93
"    24A	553,202.54	12,162.66	565,365.20
"    53	43,117.84	50,526.20	93,644.04
"    54	5,906.86	49,574.79	55,481.65
"    99	486,522.93	12,364.69	498,887.62
"    403	1,125,175.01	—	1,125,175.01
Sidewalks:			
Village of Burford	583.50	—	583.50
Connecting Links:			
City of Brantford	6,449.49	—	6,449.49
Town of Paris	5,908.13	712.80	6,620.93
Development Roads	406,475.63	—	406,475.63
Lands and Buildings	5,972.74	203.40	6,176.14
	<u>\$2,823,494.11</u>	<u>\$ 316,675.47</u>	<u>\$3,140,169.58</u>
<b>BRUCE:</b>			
Highway 4	\$ 208,328.65	\$ 58,242.36	\$ 266,571.01
"    6	267,504.55	150,547.02	418,051.57
"    9	6,539.36	62,644.82	69,184.18
"    21	133,937.76	123,627.96	257,565.72
"    70	7,583.90	—	7,583.90
"    86	658.83	35,464.99	36,123.82
Sidewalks:			
Chippawa Hill Reserve	4,458.37	—	4,458.37
Connecting Links:			
Town of Kincardine	2,301.34	2,110.18	4,411.52
Town of Port Elgin	—	1,610.01	1,610.01
Town of Southampton	—	1,364.79	1,364.79
Town of Walkerton	4,650.59	2,687.02	7,337.61
Town of Wiarton	—	1,451.39	1,451.39
Village of Lucknow	—	1,237.46	1,237.46
Village of Mildmay	—	465.82	465.82
Village of Teeswater	—	744.68	744.68
Development Roads	561,773.23	—	561,773.23
Lands and Buildings	31,808.55	4,151.64	35,960.19
Miscellaneous Surveys	6.22	—	6.22
	<u>\$1,229,551.35</u>	<u>\$ 446,350.14</u>	<u>\$1,675,901.49</u>
<b>CARLETON:</b>			
Highway 7	\$ 526,703.07	\$ 360,710.24	\$ 887,413.31
"    15	9,835.31	23,794.46	33,629.77
"    16	135,439.64	75,298.29	210,737.93
"    17	847,630.19	170,408.09	1,018,038.28
"    29	—	7,897.65	7,897.65
"    31	342,623.18	65,369.47	407,992.65
"    44	266,494.52	101,326.24	367,820.76
"    417	784.51	—	784.51
Special Agreements:			
Ottawa Queensway	1,895,827.75	3,280.66	1,899,108.41
Macdonald-Cartier Bridge	1,279,645.07	—	1,279,645.07

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>CARLETON (Cont'd)</b>			
Sidewalks:			
Township of North Gower	1,362.19	—	1,362.19
Connecting Link:			
City of Ottawa.....	88,373.94	—	88,373.94
Development Roads....	335,939.29	—	335,939.29
Lands and Buildings	50,953.74	4,936.20	55,889.94
Miscellaneous Surveys	7,498.59	—	7,498.59
	<u>\$5,789,110.99</u>	<u>\$ 813,021.30</u>	<u>\$6,602,132.29</u>
<b>DUFFERIN:</b>			
Highway 9	\$ 1,703.83	\$ 50,183.17	\$ 51,887.00
" 10	120,207.19	66,408.21	186,615.40
" 24	1,907.05	29,088.33	30,995.38
" 89	2,043.82	48,769.51	50,813.33
" 104	13.95	4,774.75	4,788.70
" 136	48.18	1,551.39	1,599.57
Connecting Links:			
Town of Orangeville	1,098.70	1,294.54	2,393.24
Village of Shelburne	—	1,540.84	1,540.84
Development Roads	660,331.35	—	660,331.35
Lands and Buildings	417.95	741.23	1,159.18
Miscellaneous Surveys	575.31	—	575.31
	<u>\$ 788,347.33</u>	<u>\$ 204,351.97</u>	<u>\$ 992,699.30</u>
<b>ELGIN:</b>			
Highway 3	\$ 20,462.62	\$ 155,434.66	\$ 175,897.28
" 4	163,790.55	37,488.84	201,279.39
" 19	12,561.49	30,845.57	43,407.06
" 73	8,145.20	34,648.35	42,793.55
" 74	301,422.34	15,615.08	317,037.42
" 76	4,621.60	16,195.12	20,816.72
" 126	5,978.02	—	5,978.02
" 401 (M.-C.F.)	819,848.27	113,163.58	933,011.85
Sidewalks:			
Village of Port Stanley	372.37	—	372.37
Connecting Links:			
Town of Aylmer	72,930.13	12,190.52	85,120.65
Village of Port Burwell	—	1,026.84	1,026.84
Development Roads	241,482.84	—	241,482.84
Lands and Buildings	44,039.53	950.32	44,989.85
Miscellaneous Surveys	208.20	—	208.20
	<u>\$1,695,863.16</u>	<u>\$ 417,558.88</u>	<u>\$2,113,422.04</u>
<b>ESSEX:</b>			
Highway 2	\$ 763,157.94	\$ 67,108.94	\$ 830,266.88
" 3	20,190.61	114,380.15	134,570.76
" 3B	64,736.75	15,417.54	80,154.29
" 18	1,722,594.92	46,570.49	1,769,165.41
" 18A	4,638.24	20,360.39	24,998.63
" 39	648,896.56	27,718.38	676,614.94
" 77	121,468.28	39,420.89	160,889.17
" 98	143,744.77	83,484.51	227,229.28
" 107	—	1,185.39	1,185.39
" 114	—	1,123.65	1,123.65
" 401 (M.-C.F.)	402,969.80	114,873.11	517,842.91
Special Agreement:			
E. C. Rowe Boulevard (Windsor)	5,892.84	—	5,892.84
Connecting Links:			
City of Windsor	1,026.10	—	1,026.10
Town of Amherstburg	—	274.70	274.70
Town of Essex	744.35	777.24	1,521.59
Town of Harrow	—	53.83	53.83
Town of Kingsville	—	372.43	372.43
Town of Leamington	901.48	302.72	1,204.20
Town of Ojibway	106,528.48	593.16	107,121.64
Village of Belle River	—	580.46	580.46

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>ESSEX (Cont'd)</b>			
Lands and Buildings.....	23,196.23	1,762.89	24,959.12
Miscellaneous Surveys.....	2,804.03	—	2,804.03
	<u>\$4,031,439.18</u>	<u>\$ 536,360.87</u>	<u>\$4,567,800.05</u>
<b>FRONTENAC:</b>			
Highway 2.....	\$ 64,472.05	\$ 64,945.27	\$ 129,417.32
“ 7.....	12,563.94	60,372.94	72,936.88
“ 15.....	33,057.70	59,316.46	92,374.16
“ 33.....	421.50	16,655.72	17,077.22
“ 38.....	309,467.40	117,768.69	427,236.09
“ 41.....	—	20,673.15	20,673.15
“ 95.....	94.11	14,909.28	15,003.39
“ 96.....	1,249.24	70,423.76	71,673.00
“ 401 (M.-C.F.).....	229,192.73	156,782.63	385,975.36
Sec. Hwy. 506.....	131,798.44	51,240.17	183,038.61
“ “ 509.....	97,453.18	39,717.07	137,170.25
“ “ 657.....	32,725.26	5,249.80	37,975.06
Connecting Link:			
City of Kingston.....	118,600.98	—	118,600.98
Development Roads.....	1,155,718.69	—	1,155,718.69
Ferries.....	110,367.36	395,252.29	505,619.65
Land and Buildings.....	120,688.64	27,643.82	148,332.46
Miscellaneous Surveys.....	47.12	—	47.12
	<u>\$2,417,918.34</u>	<u>\$1,100,951.05</u>	<u>\$3,518,869.39</u>
<b>GREY:</b>			
Highway 4.....	\$ 243,299.74	\$ 68,420.94	\$ 311,720.68
“ 6.....	274,635.00	119,510.76	394,145.76
“ 10.....	25,090.42	82,723.46	107,813.88
“ 24.....	950.86	7,832.35	8,783.21
“ 26.....	36,249.98	194,514.02	230,764.00
“ 70.....	16,366.35	19,999.78	36,366.13
“ 89.....	610.45	27,025.44	27,635.89
Connecting Links:			
City of Owen Sound.....	4,094.86	—	4,094.86
Town of Durham.....	14,045.89	3,350.46	17,396.35
Town of Hanover.....	—	1,579.89	1,579.89
Town of Meaford.....	18,232.71	1,892.87	20,125.58
Town of Thornbury.....	—	754.05	754.05
Village of Chatsworth.....	4,359.41	610.39	4,969.80
Village of Flesherton.....	—	346.33	346.33
Village of Markdale.....	—	664.42	664.42
Development Roads.....	264,137.78	—	264,137.78
Lands and Buildings.....	25,833.26	5,080.73	30,913.99
Miscellaneous Surveys.....	5,863.00	—	5,863.00
	<u>\$ 933,769.71</u>	<u>\$ 534,305.89</u>	<u>\$1,468,075.60</u>
<b>HALDIMAND:</b>			
Highway 3.....	\$ 40,892.05	\$ 166,214.72	\$ 207,106.77
“ 6.....	6,227.85	65,926.56	72,154.41
“ 54.....	3,273.60	46,408.12	49,681.72
“ 56.....	81.80	139,974.26	140,056.06
Connecting Links:			
Town of Caledonia.....	—	1,862.54	1,862.54
Town of Dunnville.....	—	1,532.18	1,532.18
Village of Cayuga.....	—	417.67	417.67
Village of Hagersville.....	—	920.10	920.10
Village of Jarvis.....	—	785.67	785.67
Development Roads.....	191,326.23	—	191,326.23
Lands and Buildings.....	139.97	1,315.03	1,455.00
Miscellaneous Surveys.....	4,791.88	—	4,791.88
	<u>\$ 246,733.38</u>	<u>\$ 425,356.85</u>	<u>\$ 672,090.23</u>

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>HALTON:</b>			
Highway 2.....	\$ 38,170.34	\$ 104,763.27	\$ 142,933.61
" 5.....	32,885.11	60,114.48	92,999.59
" 6.....	6,889.05	5,503.78	12,392.83
" 7.....	9,392.57	55,190.05	64,582.62
" 25.....	168,902.50	91,216.77	260,119.27
" 122.....	3,362.79	20,984.94	24,347.73
" 401 (M.-C.F.).....	12,331.36	187,097.12	199,428.48
" 403.....	108,731.35	57,306.60	166,037.95
Queen Elizabeth Way.....	922,273.48	172,249.62	1,094,523.10
Connecting Links:			
Town of Acton.....	107,021.33	2,026.64	109,047.97
Town of Burlington.....	—	290.80	290.80
Town of Georgetown.....	47,275.68	2,592.14	49,867.82
Town of Milton.....	—	1,496.30	1,496.30
Town of Oakville.....	454.79	48.14	502.93
Lands and Buildings.....	7,198.19	3,843.39	11,041.58
Miscellaneous Surveys.....	1,699.17	—	1,699.17
	<u>\$1,466,587.71</u>	<u>\$ 764,724.04</u>	<u>\$2,231,311.75</u>
<b>HASTINGS:</b>			
Highway 2.....	\$ 67,742.04	\$ 84,038.00	\$ 151,780.04
" 7.....	492,837.04	83,241.13	576,078.17
" 14.....	28,962.10	72,482.44	101,444.54
" 28.....	625.89	22,938.57	23,564.46
" 33.....	20,054.75	34,356.11	54,410.86
" 37.....	276,028.22	74,452.22	350,480.44
" 49.....	1,449,432.85	3,639.76	1,453,072.61
" 62.....	380,329.24	188,053.16	568,382.40
" 121.....	—	2,907.03	2,907.03
" 127.....	6,316.47	21,992.68	28,309.15
" 401 (M.-C.F.).....	56,429.85	129,848.76	186,278.61
Sec. Hwy. 500.....	149,402.20	55,978.88	205,381.08
" " 502.....	1,290.74	6,068.27	7,359.01
" " 504.....	—	271.11	271.11
" " 517.....	201.26	13,503.78	13,705.04
" " 620.....	129,278.12	24,715.40	153,993.52
Sidewalk:			
Township of Thurlow.....	1,535.63	—	1,535.63
Connecting Links:			
City of Belleville.....	154,264.23	—	154,264.23
Town of Deseronto.....	—	278.00	278.00
Village of Bancroft.....	373,110.88	315.76	373,426.64
Village of Frankford.....	—	46.30	46.30
Village of Madoc.....	281,764.75	1,223.43	282,988.18
Village of Marmora.....	6,775.60	880.67	7,656.27
Village of Stirling.....	—	89.80	89.80
Village of Tweed.....	—	421.78	421.78
Development Roads.....	338,635.05	14,079.71	352,714.76
Lands and Buildings.....	46,548.18	18,514.06	65,062.24
Miscellaneous Surveys.....	697.67	—	697.67
	<u>\$4,262,262.76</u>	<u>\$ 854,336.81</u>	<u>\$5,116,599.57</u>
<b>HURON:</b>			
Highway 4.....	\$ 251,384.40	\$ 130,118.13	\$ 381,502.53
" 8.....	6,997.73	75,141.31	82,139.04
" 9.....	—	1,996.19	1,996.19
" 21.....	541,452.55	135,705.89	677,158.44
" 23.....	83.92	9,330.58	9,414.50
" 81.....	96,452.83	17,083.41	108,536.24
" 83.....	18,579.59	42,330.73	60,910.32
" 84.....	387.87	24,810.56	25,198.43
" 86.....	28,016.52	79,467.42	107,483.94
" 87.....	10,364.38	39,032.75	49,397.13
Sidewalk:			
Township of Stephen.....	814.97	—	814.97



COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>HURON (Cont'd)</b>			
Connecting Links:			
Town of Clinton .....	467,127.68	1,767.45	468,895.13
Town of Exeter .....	9,094.14	2,197.57	11,291.71
Town of Goderich .....	60,295.72	872.52	61,168.24
Town of Seaforth .....	Cr. 261.90	453.23	191.33
Town of Wingham .....	46,082.71	2,591.35	48,674.06
Development Roads .....	595,160.15	—	595,160.15
Lands and Buildings .....	1,849.84	2,240.51	4,090.35
	<u>\$2,133,883.10</u>	<u>\$ 560,139.60</u>	<u>\$2,694,022.70</u>
<b>KENT:</b>			
Highway 2 .....	\$ 16,017.71	\$ 63,365.16	\$ 79,382.87
" 3 .....	136,414.98	101,204.84	237,619.82
" 21 .....	5,828.56	47,243.46	53,072.02
" 40 .....	33,531.49	36,078.50	69,609.99
" 78 .....	326.46	10,668.08	10,994.54
" 79 .....	54,162.74	4,984.88	59,147.62
" 98 .....	43,061.69	31,859.44	74,921.13
" 401 (M.-C.F.) .....	2,042,724.08	121,644.65	2,164,368.73
Connecting Links:			
Town of Blenheim .....	11,955.00	973.01	12,928.01
Town of Bothwell .....	—	740.74	740.74
Town of Dresden .....	—	1,093.80	1,093.80
Town of Ridgetown .....	—	6,620.67	6,620.67
Town of Tilbury .....	—	204.02	204.02
Town of Wallaceburg .....	—	2,583.47	2,583.47
Village of Thamesville .....	—	752.54	752.54
Village of Wheatley .....	—	199.17	199.17
Development Roads .....	929,356.90	—	929,356.90
Lands and Buildings .....	21,926.06	10,923.95	32,850.01
Weigh Scales .....	105.87	—	105.87
	<u>\$3,295,411.54</u>	<u>\$ 441,140.38</u>	<u>\$3,736,551.92</u>
<b>LAMBTON:</b>			
Highway 7 .....	\$ 23,510.89	\$ 87,480.23	\$ 110,991.12
" 21 .....	20,865.24	88,215.12	109,080.36
" 22 .....	209.36	3,351.97	3,561.33
" 40 .....	464,997.25	35,604.36	500,601.61
" 40A .....	1,164,330.94	7,964.87	1,172,295.81
" 40C .....	—	140.93	140.93
" 79 .....	2,989.65	33,826.20	36,815.85
" 80 .....	226,579.14	32,587.49	259,166.63
" 81 .....	914.88	250.34	1,165.22
" 82 .....	—	17,245.95	17,245.95
" 402 .....	46,312.14	33,024.62	79,336.76
Sidewalk:			
Township of Moose .....	1,586.49	—	1,586.49
Connecting Links:			
City of Sarnia .....	170,587.95	—	170,587.95
Town of Forest .....	—	961.61	961.61
Village of Thedford .....	—	703.09	703.09
Village of Watford .....	Cr. 1,000.00	377.81	Cr. 622.19
Village of Wyoming .....	—	389.29	389.29
Development Roads .....	582,693.55	—	582,693.55
Lands and Buildings .....	63,905.62	349.17	64,254.79
Weigh Scales .....	59.61	—	59.61
	<u>\$2,768,542.71</u>	<u>\$ 342,473.05</u>	<u>\$3,111,015.76</u>
<b>LANARK:</b>			
Highway 7 .....	\$ 313,793.59	\$ 126,963.06	\$ 440,756.65
" 15 .....	8,693.85	289,093.13	297,786.98
" 29 .....	36,231.36	36,885.60	73,116.96
" 43 .....	688,958.01	54,742.17	743,700.18
" 44 .....	149,878.44	32,084.47	181,962.91
Sec. Hwy. 511 .....	36.95	52,384.05	52,421.00

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
LANARK (Cont'd)			
Connecting Links:			
Town of Almonte .....	29,862.08	1,343.83	31,205.91
Town of Carleton Place .....	3,439.34	—	3,439.34
Town of Perth .....	270,729.74	—	270,729.74
Development Roads .....	448,683.09	—	448,683.09
Lands and Buildings .....	27,732.84	3,346.24	31,079.08
Weigh Scales .....	—	1,098.67	1,098.67
	\$1,978,039.29	\$ 597,941.22	\$2,575,980.51

LEEDS AND GRENVILLE:			
Highway 2 .....	\$ 179,506.18	\$ 179,217.85	\$ 358,724.03
“ 15 .....	11,253.96	94,467.05	105,721.01
“ 16 .....	5,875.90	53,583.41	59,459.31
“ 29 .....	3,051.48	58,865.49	61,916.97
“ 32 .....	726.32	40,740.23	41,466.55
“ 42 .....	33,747.21	86,351.00	120,098.21
“ 43 .....	10,854.80	50,776.45	61,631.25
“ 137 .....	1,414.11	5,304.16	6,718.27
“ 401 (M.-C.F.) .....	5,435,342.94	211,161.07	5,646,504.01
Connecting Links:			
City of Brockville .....	45,194.01	19,199.43	64,393.44
Town of Kemptville .....	29,778.04	153.38	29,931.42
Village of Athens .....	36,193.56	531.63	36,725.19
Village of Merrickville .....	—	685.24	685.24
Village of Westport .....	121,294.22	452.35	121,746.57
Development Roads .....	1,293,583.84	—	1,293,583.84
Lands and Buildings .....	10,734.72	1,764.05	12,498.77
Weigh Scales .....	1,817.57	—	1,817.57
Miscellaneous Surveys .....	22.97	—	22.97
	\$7,220,391.83	\$ 803,252.79	\$8,023,644.62

LENNOX AND ADDINGTON:			
Highway 2 .....	\$ 49,908.11	\$ 70,650.11	\$ 120,558.22
“ 7 .....	43,129.94	35,499.10	78,629.04
“ 33 .....	37,928.21	79,064.39	116,992.60
“ 41 .....	216,542.64	149,406.28	365,948.92
“ 133 .....	924,535.00	10,200.40	934,735.40
“ 401 (M.-C.F.) .....	147,834.01	122,672.88	270,506.89
Sec. Hwy. 500 .....	10,654.82	29,567.50	40,222.32
“ 502 .....	1,408.34	15,049.33	16,457.67
Connecting Links:			
Town of Napanee .....	—	204.51	204.51
Village of Bath .....	Cr. 9,463.12	278.70	Cr. 9,184.42
Development Roads .....	588,976.30	—	588,976.30
Ferries .....	—	90,612.17	90,612.17
Lands and Buildings .....	29,605.18	3,457.46	33,062.64
Miscellaneous Surveys .....	114.20	—	114.20
	\$2,041,173.63	\$ 606,662.83	\$2,647,836.46

LINCOLN:			
Highway 8 .....	\$ 293,367.15	\$ 116,286.25	\$ 409,653.40
“ 8A .....	104.37	6,587.81	6,692.18
“ 20 .....	15,321.39	76,420.45	91,741.84
“ 57 .....	55.46	7,193.99	7,249.45
“ 58 .....	927.98	—	927.98
“ 405 .....	66,578.71	28,019.97	94,598.68
“ 406 .....	1,233,042.68	4,941.85	1,237,984.53
Queen Elizabeth Way .....	1,461,030.46	267,784.24	1,728,814.70
Special Agreement:			
Carleton St. Tunnel (St. Catharines) .....	342,834.24	—	342,834.24
Connecting Links:			
Town of Beamsville .....	—	819.46	819.46
Town of Grimsby .....	—	693.39	693.39

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>LINCOLN (Cont'd)</b>			
Development Roads.....	333,789.29	—	333,789.29
Lands and Buildings.....	9,041.69	519.94	9,561.63
Miscellaneous Surveys.....	1,620.69	—	1,620.69
	<u>\$3,757,714.11</u>	<u>\$ 509,267.35</u>	<u>\$4,266,981.46</u>
<b>MIDDLESEX:</b>			
Highway 2.....	\$ 14,969.69	\$ 111,890.56	\$ 126,860.25
“ 4.....	494,581.52	80,605.57	575,187.09
“ 7.....	14,131.53	105,883.88	120,015.41
“ 22.....	6,552.94	59,119.14	65,672.08
“ 23.....	1,471.86	20,945.72	22,417.58
“ 73.....	424.08	10,576.03	11,000.11
“ 74.....	19,300.58	15,231.10	34,531.68
“ 76.....	226.49	1,657.23	1,883.72
“ 80.....	2,696.79	23,883.72	26,580.51
“ 81.....	488,703.00	116,586.76	605,289.76
“ 126.....	91,007.91	18,280.69	109,288.60
“ 135.....	65.09	7,569.40	7,634.49
“ 401 (M.-C.F.).....	720,911.92	124,350.61	845,262.53
Sidewalk:			
Township of North Dorchester.....	672.00	—	672.00
Storm Sewers:			
Village of Ailsa Craig.....	9,147.57	—	9,147.57
Connecting Links:			
City of London.....	447,795.94	1,076.20	448,872.14
Town of Parkhill.....	—	1,260.92	1,260.92
Town of Strathroy.....	—	800.82	800.92
Village of Lucan.....	—	571.29	571.29
Development Roads.....	187,977.13	—	187,977.13
Lands and Buildings.....	84,620.04	16,582.71	101,202.75
Miscellaneous Surveys.....	182.69	—	182.69
	<u>\$2,585,438.77</u>	<u>\$ 716,872.35</u>	<u>\$3,302,311.12</u>
<b>NORFOLK:</b>			
Highway 3.....	\$ 260,653.52	\$ 76,981.91	\$ 337,635.43
“ 6.....	88,638.04	14,303.22	102,941.26
“ 19.....	1,632.78	6,847.11	8,479.89
“ 24.....	159,757.02	68,034.91	227,791.93
“ 24A.....	29,418.05	13,881.75	43,299.80
“ 59.....	38,027.22	51,903.70	89,930.92
Connecting Links:			
Town of Delhi.....	5,157.25	1,161.32	6,318.57
Town of Port Dover.....	—	1,757.17	1,757.17
Town of Simcoe.....	83,300.41	1,308.14	84,608.55
Development Roads.....	326,757.25	—	326,757.25
Lands and Buildings.....	14,700.42	77.88	14,778.30
Miscellaneous Surveys.....	259.63	—	259.63
	<u>\$1,008,301.59</u>	<u>\$ 236,257.11</u>	<u>\$1,244,558.70</u>
<b>NORTHUMBERLAND AND DURHAM:</b>			
Highway 2.....	\$ 57,430.87	\$ 215,276.88	\$ 272,707.75
“ 7.....	—	2,224.71	2,224.71
“ 7A.....	93,933.86	55,416.63	149,350.49
“ 28.....	20,774.46	100,364.80	121,139.26
“ 30.....	21,455.66	84,419.54	105,875.20
“ 33.....	27,398.07	14,146.34	41,544.41
“ 35.....	80,689.44	146,033.54	226,722.98
“ 45.....	3,017.90	73,497.76	76,515.66
“ 106.....	—	7,163.20	7,163.20
“ 115.....	20,826.34	72,971.17	93,797.51
“ 401 (M.-C.F.).....	500,715.83	498,200.77	998,916.60
Sidewalk:			
Township of Percy.....	1,980.73	—	1,980.73
Connecting Links:			
Town of Campbellford.....	—	705.11	705.11

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>NORTHUMBERLAND AND DURHAM (Cont'd)</b>			
Town of Cobourg	96,989.63	2,800.64	99,790.27
Town of Port Hope	120,439.59	3,756.09	124,195.68
Town of Trenton	96,646.35	—	96,646.35
Village of Brighton	—	1,562.19	1,562.19
Village of Colborne	—	251.06	251.06
Village of Hastings	204.90	430.97	635.87
Village of Newcastle	—	827.54	827.54
Development Roads	649,631.82	—	649,631.82
Lands and Buildings	27,563.36	13,666.38	41,229.74
Weigh Scales	5,082.33	—	5,082.33
Miscellaneous Surveys	7,404.15	—	7,404.15
	<u>\$1,832,185.29</u>	<u>\$1,293,715.32</u>	<u>\$3,125,900.61</u>
<b>ONTARIO:</b>			
Highway 2	\$ 472,094.07	\$ 74,325.58	\$ 546,419.65
“ 7	21,743.57	206,380.07	228,123.64
“ 7A	3,690.87	20,956.12	24,646.99
“ 12	792,363.84	235,409.38	1,027,773.22
“ 47	6,346.41	93,861.38	100,207.79
“ 48	226,873.64	48,011.53	274,885.17
“ 69	14,218.93	48,905.12	63,124.05
“ 401 (M.-C.F.)	147,602.39	217,774.82	365,377.21
“ 407	244.22	—	244.22
Sec. Hwy. 503	—	12,784.14	12,784.14
Sidewalk:	—	—	—
Township of Mara	328.10	—	328.10
Connecting Links:	—	—	—
City of Oshawa	408,045.63	—	408,045.63
Town of Uxbridge	15,755.59	2,735.53	18,491.12
Town of Whitby	3,401.73	8,480.66	11,882.39
Village of Beaverton	89,244.04	1,721.08	90,965.12
Development Roads	228,859.10	29,938.99	258,798.09
Lands and Buildings	4,904.82	2,700.45	7,605.27
Miscellaneous Surveys	1,365.78	—	1,365.78
	<u>\$2,437,082.73</u>	<u>\$1,003,984.85</u>	<u>\$3,441,067.58</u>
<b>OXFORD:</b>			
Highway 2	\$ 49,193.64	\$ 115,119.13	\$ 164,312.77
“ 3	688.09	8,090.99	8,779.08
“ 19	21,059.43	68,288.89	89,348.32
“ 53	2,126.10	14,281.72	16,407.82
“ 59	121,361.03	119,883.87	241,244.90
“ 97	294,665.29	55,897.33	350,562.62
“ 401 (M.-C.F.)	8,166.77	167,965.09	176,131.86
“ 403	2,486.98	—	2,486.98
Connecting Links:	—	—	—
City of Woodstock	35,522.85	95.06	35,617.91
Town of Ingersoll	30,078.07	—	30,078.07
Town of Tillsonburg	—	447.96	447.96
Town of Norwich	—	563.68	563.68
Village of Tavistock	—	2,226.54	2,226.54
Development Roads	2,300.84	—	2,300.84
Lands and Buildings	4,061.77	9,218.40	13,280.17
	<u>\$ 571,710.86</u>	<u>\$ 562,078.66</u>	<u>\$1,133,789.52</u>
<b>EEL:</b>			
Highway 2	\$ 1,860.03	\$ 69,933.71	\$ 71,793.74
“ 5	32,415.79	97,859.91	130,275.70
“ 7	53,753.79	56,380.47	110,134.26
“ 9	98,858.34	26,877.54	125,735.88
“ 10	2,755,400.94	178,682.03	2,934,082.97
“ 24	1,472.71	17,825.50	19,298.21
“ 27	200.54	—	200.54
“ 50	711,786.84	57,468.43	769,255.27
“ 122	80,103.49	21,495.52	101,599.01



COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>PEEL (Cont'd)</b>			
" 136 .....	379,817.06	23,368.49	403,185.55
" 401 (M.-C.F.) .....	13,313.70	123,469.07	136,782.77
" 403 .....	333,273.20	—	333,273.20
" 407 .....	2,132.09	—	2,132.09
Queen Elizabeth Way.....	1,550,780.03	100,554.73	1,651,334.76
Special Agreement:			
Dixon Road (Toronto).....	Cr. 16,822.45	—	Cr. 16,822.45
Sidewalks:			
Township of Toronto.....	26,330.14	—	26,330.14
Township of Albion.....	1,513.05	—	1,513.05
Connecting Links:			
Town of Brampton.....	Cr. 535.60	8,117.01	7,581.41
Town of Port Credit.....	7,533.86	7,772.39	15,306.25
Village of Bolton.....	—	2,985.40	2,985.40
Development Roads.....	230,622.37	—	230,622.37
Lands and Buildings.....	12,935.71	619.93	13,555.64
Miscellaneous Surveys.....	Cr. 194.86	—	Cr. 194.86
	<u>\$6,276,550.77</u>	<u>\$ 793,410.13</u>	<u>\$7,069,960.90</u>
<b>PERTH:</b>			
Highway 7.....	\$ 92,670.65	\$ 95,968.58	\$ 188,639.23
" 8.....	204,419.28	54,986.62	259,405.90
" 19.....	6,237.37	59,458.22	65,695.59
" 23.....	224,124.59	119,002.18	343,126.77
" 59.....	373.57	8,109.72	8,483.29
" 83.....	947.78	6,477.31	7,425.09
" 86.....	17,471.80	31,387.47	48,859.27
Connecting Links:			
City of Stratford.....	63,873.24	151.66	64,024.90
Town of Listowel.....	—	4,362.35	4,362.35
Town of Mitchell.....	109,353.61	2,121.06	111,474.67
Town of St. Marys.....	71,688.21	—	71,688.21
Village of Milverton.....	—	628.52	628.52
Development Roads.....	259,486.67	—	259,486.67
Lands and Buildings.....	11,528.87	5,719.17	17,248.04
	<u>\$1,062,175.64</u>	<u>\$ 388,372.86</u>	<u>\$1,450,548.50</u>
<b>PETERBOROUGH:</b>			
Highway 7.....	\$ 118,918.48	\$ 142,908.35	\$ 261,826.83
" 28.....	26,414.54	93,789.74	120,204.28
" 30.....	69.54	7,330.10	7,399.64
" 36.....	325,907.94	51,274.45	377,182.39
" 45.....	3,566.71	13,334.44	16,901.15
" 115.....	17,085.75	2,364.49	19,450.24
" 121.....	—	29,101.57	29,101.57
Sec. Hwy. 503.....	—	3,825.01	3,825.01
" " 504.....	65,984.56	22,407.52	88,392.08
" " 507.....	24,319.66	98,693.03	123,012.69
" " 620.....	102,039.76	31,332.50	133,372.26
" " 620A.....	—	263.94	263.94
" " 649.....	368.79	17,195.17	17,563.96
Connecting Links:			
Village of Lakefield.....	—	621.39	621.39
Village of Norwood.....	—	347.79	347.79
Development Roads.....	750,177.49	—	750,177.49
Lands and Buildings.....	59,358.56	896.13	60,254.69
Miscellaneous Surveys.....	60.11	—	60.11
	<u>\$1,494,271.89</u>	<u>\$ 515,685.62</u>	<u>\$2,009,957.51</u>
<b>PRESCOTT AND RUSSELL:</b>			
Highway 17.....	\$ 156,441.06	\$ 263,715.41	\$ 420,156.47
" 34.....	592.35	24,556.05	25,148.40
" 417.....	871.68	—	871.68

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>PRESCOTT AND RUSSELL (Cont'd)</b>			
Special Agreement:			
Perley Bridge (Hawkesbury)	9,883.37	40,083.32	49,966.69
Sidewalks:			
Township of Alfred	1,174.59	—	1,174.59
Township of East Hawkesbury	604.87	—	604.87
Township of North Plantagenet	275.00	—	275.00
Connecting Links:			
Town of Hawkesbury	290,988.85	3,866.67	294,855.52
Town of Rockland	—	1,119.17	1,119.17
Town of Vankleek Hill	—	670.74	670.74
Development Roads	381,938.63	—	381,938.63
Lands and Buildings	3,747.42	3,439.73	7,187.15
Weigh Scales	200.52	1,292.00	1,492.52
Miscellaneous Surveys	58.32	—	58.32
	<u>\$ 846,776.66</u>	<u>\$ 338,743.09</u>	<u>\$1,185,519.75</u>
<b>PRINCE EDWARD:</b>			
Highway 14	\$ 25,009.35	\$ 32,635.85	\$ 57,645.20
" 33	27,310.04	68,933.12	96,243.16
" 49	842,656.28	19,562.06	862,218.34
Access Road:			
Sandbanks Provincial Park	89,406.07	—	89,406.07
Connecting Links:			
Town of Picton	—	2,325.27	2,325.27
Village of Bloomfield	242,468.96	—	242,468.96
Development Roads	539,269.87	—	539,269.87
Ferries	—	90,612.17	90,612.17
Lands and Buildings	1,179.66	145.40	1,325.06
Miscellaneous Surveys	3,334.76	—	3,334.76
	<u>\$1,770,634.99</u>	<u>\$ 214,213.87</u>	<u>\$1,984,848.86</u>
<b>RENFREW:</b>			
Highway 17	\$ 522,759.38	\$ 381,050.88	\$ 903,810.26
" 29	—	1,433.79	1,433.79
" 41	614,907.45	103,742.41	718,649.86
" 60	229,717.40	116,704.60	346,422.00
" 62	282,458.98	77,367.47	359,826.45
" 132	9.34	36,129.50	36,138.84
Sec. Hwy. 500	1,110.73	56,918.74	58,029.47
" " 508	949,368.76	60,135.84	1,009,504.60
" " 511	52.16	23,144.61	23,196.77
Sec. Hwy. 512	65,984.23	47,885.35	113,869.58
" " 513	16,221.09	21,079.55	37,300.64
" " 515	46,176.11	61,293.07	107,469.18
" " 517	461.25	12,021.34	12,482.59
" " 521	10,427.35	16,259.80	26,687.15
" " 635	2,197.47	4,747.59	6,945.06
Access Road:			
Hwy. 508—Mountain Chute Development	3,472.65	—	3,472.65
Connecting Links:			
Town of Arnprior	86,128.46	—	86,128.46
Town of Pembroke	4,670.34	25,250.78	29,921.12
Town of Renfrew	—	288.68	288.68
Village of Barry's Bay	—	1,204.57	1,204.57
Village of Eganville	—	88.44	88.44
Development Roads	924,464.35	—	924,464.35
Lands and Buildings	75,888.65	7,777.77	83,666.42
Weigh Scales	1,004.00	786.91	1,790.91
Miscellaneous Surveys	787.67	—	787.67
	<u>\$3,838,267.82</u>	<u>\$1,055,311.69</u>	<u>\$4,893,579.51</u>
<b>MCOE:</b>			
Highway 9	\$ 113,409.51	\$ 24,266.15	\$ 137,675.66
" 11	1,070,446.77	300,934.83	1,371,381.60
" 12	140,877.89	116,308.49	257,186.38

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
SIMCOE (Cont'd)			
" 24	473.43	33,949.93	34,423.36
" 26	31,009.95	104,835.84	135,845.79
" 27	192,873.74	229,050.86	421,924.60
" 69	—	2,501.75	2,501.75
" 88	2,617.72	21,680.68	24,298.40
" 89	14,333.13	62,362.96	76,696.09
" 90	733,523.58	37,469.23	770,992.81
" 91	173,689.11	20,046.16	193,735.27
" 92	1,361.88	25,435.88	26,797.76
" 93	10,619.16	57,190.45	67,809.61
" 103	564.64	29,536.23	30,100.87
" 120	—	3,377.46	3,377.46
" 400	150,720.73	327,368.70	478,089.43
Access Road:			
Ste. Marie Among The Hurons	16,132.47	—	16,132.47
Connecting Links:			
City of Barrie	231,564.16	—	231,564.16
Town of Alliston	7,897.56	2,755.33	10,652.89
Town of Bradford	—	5,813.98	5,813.98
Town of Collingwood	—	1,325.31	1,325.31
Town of Orillia	22,713.04	8,218.22	30,931.26
Town of Penetang	—	1,973.83	1,973.83
Town of Stayner	265,756.87	1,067.90	266,824.77
Village of Coldwater	—	1,855.33	1,855.33
Village of Cookstown	—	3,817.81	3,817.81
Village of Elmvale	—	2,604.01	2,604.01
Village of Port McNicoll	—	1,068.11	1,068.11
Village of Victoria Harbour	—	2,755.22	2,755.22
Village of Wasaga Beach	364.41	638.05	1,002.46
Development Roads	360,813.51	—	360,813.51
Lands and Buildings	51,882.29	3,517.06	55,399.35
Miscellaneous Surveys	8.01	—	8.01
	<u>\$3,593,653.56</u>	<u>\$1,433,725.76</u>	<u>\$5,027,379.32</u>
STORMONT, DUNDAS AND GLENGARRY:			
Highway 2	\$ 117,765.30	\$ 116,340.93	\$ 234,106.23
" 31	23,578.81	81,766.35	105,345.16
" 34	1,790.62	67,282.13	69,072.75
" 43	40,936.84	123,136.32	164,073.16
" 401 (M.-C.F.)	2,309,498.88	279,404.33	2,588,903.21
" 417	87.17	—	87.17
Sidewalks:			
Township of Lochiel	3,512.55	—	3,512.55
Township of Mountain	1,244.00	—	1,244.00
Connecting Links:			
City of Cornwall	303,656.65	—	303,656.65
Town of Alexandria	—	1,250.08	1,250.08
Village of Winchester	—	884.42	884.42
Development Roads	342,651.47	—	342,651.47
Lands and Buildings	19,580.76	4,106.90	23,687.66
Weigh Scales	73,191.48	—	73,191.48
Miscellaneous Surveys	265.02	—	265.02
	<u>\$3,237,759.55</u>	<u>\$ 674,171.46</u>	<u>\$3,911,931.01</u>
VICTORIA:			
Highway 7	\$ 23,522.96	\$ 97,812.37	\$ 121,335.33
" 35	241,648.53	84,277.72	325,926.25
" 35A	1,073.40	3,117.06	4,190.46
" 36	1,472.47	95,804.16	97,276.63
" 46	393,711.01	72,091.36	465,802.37
" 48	6,173.07	8,572.61	14,745.68
" 121	79,640.99	26,997.52	106,638.51
Sec. Hwy. 503	211,345.46	98,520.12	309,865.58
" 505	2,827.34	26,880.75	29,708.09
" 649	2,265.11	17,051.20	19,316.31

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>VICTORIA (Cont'd)</b>			
Connecting Links:			
Town of Lindsay .....	191,771.59	8,265.79	200,037.38
Village of Bobcaygeon.....	—	1,362.93	1,362.93
Village of Fenelon Falls....	66,889.06	1,422.08	68,311.14
Village of Omamee .....	166,985.27	1,159.25	168,144.52
Development Roads.....	550,408.37	2,881.05	553,289.42
Lands and Buildings.....	33,593.58	269.56	33,863.14
	<u>\$1,973,328.21</u>	<u>\$ 546,485.53</u>	<u>\$2,519,813.74</u>
<b>WATERLOO:</b>			
Highway 7.....	\$ 15,752.52	90,696.06	\$ 106,448.58
" 8 .....	3,264,473.06	34,560.43	3,299,033.49
" 24 .....	239,798.43	25,779.39	265,577.82
" 24A .....	533.65	11,882.60	12,416.25
" 85 .....	35,857.46	18,470.73	54,328.19
" 86 .....	213,066.63	43,488.65	256,555.28
" 97 .....	6,524.45	30,139.80	36,664.25
" 401 (M.-C.F.).....	7,150.05	80,242.10	87,392.15
Sidewalk:			
Township of Wellesley.....	200.15	—	200.15
Connecting Links:			
City of Galt.....	81,683.17	10.80	81,693.97
City of Kitchener.....	—	2,596.74	2,596.74
Town of Elmira.....	5,953.66	8,372.44	14,326.10
Town of Hespeler.....	—	4,745.31	4,745.31
Town of New Hamburg.....	—	284.91	284.91
Town of Preston .....	95,402.88	12,113.51	107,516.39
Lands and Buildings .....	1,564.78	3,632.35	5,197.13
Miscellaneous Surveys.....	1,253.94	—	1,253.94
	<u>\$3,969,214.83</u>	<u>\$ 367,015.82</u>	<u>\$4,336,230.65</u>
<b>WELLAND:</b>			
Highway 3 .....	\$ 754,809.49	\$ 133,413.20	\$ 888,222.69
" 3A .....	—	43,167.14	43,167.14
" 3C .....	3,633.35	34,790.23	38,423.58
" 8 .....	549,790.81	8,392.98	558,183.79
Highway 20 .....	166,852.24	42,197.14	209,049.38
" 57 .....	339.85	14,620.62	14,960.47
" 58 .....	4,881,647.56	62,466.29	4,944,113.85
" 405 .....	15,854.38	5,689.19	21,543.57
" 406 .....	190,774.09	—	190,774.09
Queen Elizabeth Way.....	178,732.90	610,425.61	789,158.51
Special Agreement:			
Carleton Street Tunnel (St. Catharines).....	11,380.00	—	11,380.00
Connecting Links:			
City of Niagara Falls .....	771,633.48	—	771,633.48
City of Port Colborne .....	—	950.36	950.36
Town of Fort Erie .....	—	192.93	192.93
Development Roads .....	293,606.29	—	293,606.29
Lands and Buildings .....	97,648.83	629.31	98,278.14
Miscellaneous Surveys .....	1,275.77	—	1,275.77
	<u>\$7,917,979.04</u>	<u>\$ 956,935.00</u>	<u>\$8,874,914.04</u>
<b>ELLINGTON:</b>			
Highway 6 .....	\$ 110,722.73	\$ 131,345.74	\$ 242,068.47
" 7 .....	120,351.95	34,274.52	154,626.47
" 9 .....	22,800.74	83,728.35	106,529.09
" 23 .....	916.22	5,355.92	6,272.14
" 24 .....	22,820.33	56,865.96	79,686.29
" 25 .....	1,304.07	24,609.96	25,914.03
" 86 .....	146,303.94	40,033.92	186,337.86
" 87 .....	2,955.25	13,395.39	16,350.64
" 89 .....	12,423.23	52,742.34	65,165.57
" 401 (M.-C.F.) .....	7,601.55	98,886.42	106,487.97



COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>WELLINGTON (Cont'd)</b>			
Sidewalks:	429.08	—	429.08
Township of Nichol.....			
Connecting Links:	212,724.42	692.34	213,416.76
City of Guelph.....	1,110.12	969.52	2,079.64
Town of Fergus.....	75,874.78	1,311.54	77,186.32
Town of Harriston.....	—	2,274.89	2,274.89
Town of Mount Forest.....	—	449.44	449.44
Town of Palmerston.....	—	487.63	487.63
Village of Arthur.....	—	641.56	641.56
Village of Clifford.....	—	918.51	918.51
Village of Erin.....	524,173.80	—	524,173.80
Development Roads .....	42,952.13	6,039.98	48,992.11
Lands and Buildings.....			
	<u>\$1,305,464.34</u>	<u>\$ 555,023.93</u>	<u>\$1,860,488.27</u>
<b>WENTWORTH:</b>			
Highway 2 .....	\$ 93,883.67	\$ 67,819.00	\$ 161,702.67
" 5 .....	217,873.60	86,124.77	303,998.37
" 6 .....	398,288.81	86,015.20	484,304.01
" 8 .....	84,547.53	87,845.33	172,392.86
" 20.....	8,632.59	115,447.98	124,080.57
" 52 .....	185,935.88	58,248.61	244,184.49
" 53 .....	599.17	25,367.46	25,966.63
" 56 .....	4,102.23	29,019.93	33,122.16
" 97 .....	1,078.62	31,975.81	33,054.43
" 99 .....	14,482.10	38,388.83	52,870.93
" 102 .....	6.50	—	6.50
" 403 .....	1,489,677.78	26,545.29	1,516,223.07
Queen Elizabeth Way.....	205,331.74	210,334.26	415,666.00
Connecting Links:			
City of Hamilton.....	269,296.65	—	269,296.65
Town of Dundas.....	405,974.84	—	405,974.84
Lands and Buildings .....	57,842.25	89.07	57,931.32
Miscellaneous Surveys.....	3,118.11	—	3,118.11
	<u>\$3,440,672.07</u>	<u>\$ 863,221.54</u>	<u>\$4,303,893.61</u>
<b>YORK:</b>			
Highway 2 .....	\$ 4,339.65	\$ 1,139.38	\$ 5,479.03
" 2A.....	1,345.03	14,119.18	15,464.21
" 5 .....	3,042.33	4,173.07	7,215.40
" 7 .....	343,499.07	155,751.67	499,250.74
" 9 .....	485,177.23	33,460.82	518,638.05
" 11 .....	61,175.90	195,189.22	256,365.12
" 27 .....	307,251.93	259,880.04	567,131.97
" 47 .....	2,436.66	17,761.17	20,197.83
" 48 .....	73,772.66	183,023.23	256,795.89
" 50 .....	5,471.02	12,557.42	18,028.44
" 117.....	685.28	1,497.32	2,182.60
" 400.....	1,807,435.07	230,807.01	2,038,242.08
" 401 (M.-C.F.).....	25,211,405.99	642,248.56	25,853,654.55
" 404 .....	15,734.62	—	15,734.62
" 407.....	409,857.77	—	409,857.77
Queen Elizabeth Way..	237,509.10	116,788.51	354,297.61
Special Agreements:			
Yonge Street (Toronto).....	54.20	—	54.20
Lakeshore Road East of Hwy. 27 .....	980.01	—	980.01
Dixon Road (Toronto).....	15.50	—	15.50
International Airport Road (Toronto).....	21,367.07	18,137.42	39,504.49
Sidewalks:			
Township of East Gwillimbury.....	3,234.27	—	3,234.27
Township of Georgina.....	3,628.32	—	3,628.32
Township of Vaughan.....	6,497.40	—	6,497.40
Storm Sewers:			
Municipality of Metropolitan Toronto	7,032.21	—	7,032.21

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
YORK (Cont'd)			
Connecting Links:			
Town of Aurora.....	—	5,868.20	5,868.20
Town of Richmond Hill.....	6,856.58	10,397.10	17,253.68
Village of Markham.....	—	4,975.72	4,975.72
Village of Stouffville.....	—	3,378.20	3,378.20
Development Roads.....	214,775.45	—	214,775.45
Lands and Buildings.....	314,946.95	50,275.32	365,222.27
Miscellaneous Surveys.....	1,739.41	—	1,739.41
	<u>\$29,551,266.68</u>	<u>\$1,961,428.56</u>	<u>\$31,512,695.24</u>

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
ALGOMA:			
Highway 17.....	\$ 966,273.38	\$ 977,652.17	\$1,943,925.55
" 101.....	2,338,890.31	23,838.02	2,362,728.33
" 108.....	4,066.10	76,113.95	80,180.05
" 129.....	457,808.27	187,703.62	645,511.89
Sec. Hwy. 538.....	13,727.20	8,169.57	21,896.77
" 546.....	40,813.77	89,904.66	130,718.43
" 547.....	76,899.53	3,909.29	80,808.82
" 548.....	37,108.88	78,045.18	115,154.06
" 550.....	110,256.89	20,901.17	131,158.06
" 552.....	2,057.43	31,039.74	33,097.17
" 553.....	10,954.03	51,756.65	62,710.68
" 554.....	3,887.67	23,536.61	27,424.28
" 555.....	1,877.08	18,772.16	20,649.24
" 556.....	42,261.55	82,491.70	124,753.25
" 557.....	4,073.72	32,619.78	36,693.50
" 561.....	9,290.30	73,498.05	82,788.35
" 563.....	142.41	11,022.70	11,165.11
" 565.....	1,924.62	2,570.42	4,495.04
" 631.....	603,431.08	71,096.01	674,527.09
" 638.....	7,266.80	73,102.76	80,369.56
" 639.....	59,335.46	16,685.10	76,020.56
" 651.....	36,093.37	844.93	36,938.30
Access Roads:			
Panel Mine Road.....	—	3,436.16	3,436.16
Denison Mine Road.....	—	4,331.70	4,331.70
Stanrock Mine Road.....	—	7,196.32	7,196.32
Milliken Mine Road.....	—	4,191.00	4,191.00
Alcona-Nordic Mine Road.....	—	4,193.36	4,193.36
Old Garden River Road.....	196,738.04	—	196,738.04
Point Deschenes Road.....	64,842.67	—	64,842.67
Connecting Links:			
City of Sault Ste. Marie.....	374,741.85	—	374,741.85
Town of Blind River.....	41,622.01	5,895.43	47,517.44
Town of Thessalon.....	67,529.52	958.71	68,488.23
Unincorporated Township Roads:			
Statute Labour Board.....	10,792.46	63,386.74	74,179.20
Local Road Board.....	18,146.04	11,782.32	29,928.36
Special—Settlers.....	8,460.26	687.23	9,147.49
Development Roads.....	7,305.85	—	7,305.85
Ferries.....	—	106,521.71	106,521.71
Lands and Buildings.....	116,352.82	18,234.73	134,587.55
Weigh Scales.....	7,841.06	—	7,841.06
Miscellaneous Surveys.....	128.35	—	128.35
	<u>\$5,742,940.78</u>	<u>\$2,186,089.65</u>	<u>\$7,929,030.43</u>

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>COCHRANE:</b>			
Highway 11.....	\$1,476,567.10	\$ 640,967.72	\$2,117,534.82
"    67.....	32,967.37	42,635.45	75,602.82
"    101.....	11,261.19	152,777.67	164,038.86
"    144.....	58,315.40	—	58,315.40
Sec. Hwy. 572.....	20.60	28,924.85	28,945.45
"    574.....	161,834.18	84,136.96	245,971.14
"    575.....	8,463.92	1,597.50	10,061.42
"    576.....	545,915.24	47,423.19	593,338.43
"    577.....	55,648.84	39,853.12	95,501.96
"    578.....	250,184.74	12,145.27	262,330.01
"    579.....	52,522.81	55,921.74	108,444.55
"    581.....	4,129.74	10,571.07	14,700.81
"    583.....	150,771.55	82,750.72	233,522.27
"    610.....	120,146.38	19,017.06	139,163.44
"    626.....	80.61	16,580.18	16,660.79
"    629.....	—	14,339.26	14,339.26
"    631.....	101.90	9,858.72	9,960.62
"    636.....	4,382.09	11,872.77	16,254.86
Sec. Hwy. 652.....	262,702.80	3,586.12	266,288.92
"    655.....	390,776.25	8,590.43	399,366.68
Tertiary Road 807...	106,490.10	15,454.96	121,945.06
Sidewalks:			
Township of Shackleton and Machin.....	3,725.69	—	3,725.69
Connecting Links:			
Town of Cochrane.....	—	4,656.43	4,656.43
Town of Hearst.....	—	3,610.46	3,610.46
Town of Iroquois Falls.....	—	2,541.91	2,541.91
Town of Matheson.....	—	931.14	931.14
Town of Timmins.....	—	4,154.55	4,154.55
Unincorporated Township Roads:			
Statute Labour Board.....	89,535.54	70,173.96	159,709.50
Special—Settlers.....	18,255.12	13,848.50	32,103.62
Development Roads.....	185,981.36	—	185,981.36
Ferries.....	—	41,445.77	41,445.77
Lands and Buildings.....	91,403.46	23,670.80	115,074.26
Weigh Scales.....	1,267.25	—	1,267.25
Miscellaneous Surveys.....	2,572.68	—	2,572.68
	<u>\$4,086,023.91</u>	<u>\$1,464,038.28</u>	<u>\$5,550,062.19</u>
<b>HALIBURTON:</b>			
Highway 28.....	\$ 1,555.40	\$ 16,745.22	\$ 18,300.62
"    35.....	402,536.23	132,978.18	535,514.41
"    60.....	519.15	12,988.00	13,507.15
"    121.....	157,304.37	96,665.73	253,970.10
Sec. Hwy. 503.....	2,929.57	53,654.19	56,583.76
"    507.....	—	18,494.74	18,494.74
"    519.....	44,702.92	61,118.05	105,820.97
"    530.....	62,527.39	31,140.51	93,667.90
"    648.....	8,887.12	33,720.29	42,607.41
Development Roads.....	97,928.02	—	97,928.02
Lands and Buildings.....	20,238.91	1,428.64	21,667.55
	<u>\$ 799,129.08</u>	<u>\$ 458,933.55</u>	<u>\$1,258,062.63</u>
<b>KENORA:</b>			
Highway 17.....	\$1,990,558.72	303,589.65	\$2,294,148.37
"    71.....	50,156.07	80,526.82	130,682.89
"    72.....	826,320.15	62,918.77	889,238.92
"    105.....	2,399,557.64	100,383.14	2,499,940.78
"    116.....	8,235.64	21,402.54	29,638.18
"    119.....	124.45	16,602.26	16,726.71
"    125.....	6,559.23	7,464.41	14,023.64
"    128.....	5,848.98	35,378.62	41,227.60
Sec. Hwy. 594.....	34,550.41	19,427.51	53,977.92
"    596.....	437.88	72,371.83	72,809.71
"    598.....	516.75	6,740.68	7,257.43
"    599.....	346,033.18	76,014.90	422,048.08

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>KENORA (Cont'd)</b>			
" " 601.....	80,663.37	22,573.04	103,236.41
" " 603.....	—	8,288.73	8,288.73
" " 604.....	2,804.94	6,946.33	9,751.27
" " 605.....	73,440.23	7,239.98	80,680.21
" " 609.....	6,195.71	10,166.33	16,362.04
" " 618.....	32.46	8,929.00	8,961.46
" " 641.....	81.94	37,097.86	37,179.80
" " 642.....	11,536.95	12,197.03	23,733.98
" " 646.....	—	5,744.24	5,744.24
" " 647.....	6,136.74	6,591.94	12,728.68
" " 659.....	3,000.76	9,402.60	12,403.36
Tertiary Road 804.....	—	3,760.55	3,760.55
Industrial Road:			
Ignace to Valora.....	—	21,572.80	21,572.80
Connecting Link:			
Town of Kenora.....	—	1,574.80	1,574.80
Unincorporated Township Roads:			
Statute Labour Board.....	6,957.60	39,930.88	46,888.48
Local Road Board.....	—	1,371.37	1,371.37
Special—Settlers.....	—	6,716.91	6,716.91
Special—Indian Reserves.....	—	7,025.49	7,025.49
Lands and Buildings.....	73,318.53	7,905.09	81,223.62
Weigh Scales.....	750.00	—	750.00
Miscellaneous Surveys.....	417.37	—	417.37
	<u>\$5,934,235.70</u>	<u>\$1,027,856.10</u>	<u>\$6,962,091.80</u>
<b>MUSKOKA:</b>			
Highway 11.....	\$ 484,984.42	\$ 133,366.94	\$ 618,351.36
" " 35.....	469,726.72	58,044.42	527,771.14
" " 60.....	2,168.90	5,181.96	7,350.86
" " 69.....	299,265.23	67,173.83	366,439.06
" " 103.....	36,375.34	131,121.21	167,496.55
" " 118.....	260,682.72	100,286.55	360,969.27
" " 400.....	679.17	—	679.17
Sec. Hwy. 501.....	12,509.72	33,925.36	46,435.08
" " 514.....	4,227.61	25,452.60	29,680.21
" " 516.....	17,147.90	36,295.70	53,443.60
" " 525.....	—	2,159.09	2,159.09
" " 527.....	301.29	31,216.18	31,517.47
" " 532.....	218,231.45	54,790.25	273,021.70
" " 592.....	—	487.00	487.00
" " 612.....	241.40	6,918.87	7,160.27
" " 632.....	31,899.63	19,078.32	50,977.95
" " 660.....	55,250.25	24,114.09	79,364.34
Connecting Links:			
Town of Bracebridge.....	—	1,110.89	1,110.89
Town of Gravenhurst.....	27,682.79	3,067.52	30,750.31
Town of Huntsville.....	—	3,319.99	3,319.99
Village of Port Carling.....	—	1,382.77	1,382.77
Unincorporated Township Roads:			
Statute Labour Board.....	—	13,807.00	13,807.00
Special—Settlers.....	—	198.80	198.80
Development Roads.....	555,668.40	—	555,668.40
Lands and Buildings.....	45,562.80	16,653.55	62,216.35
Miscellaneous Surveys.....	1,048.08	—	1,048.08
	<u>\$2,523,653.82</u>	<u>\$ 769,152.89</u>	<u>\$3,292,806.71</u>
<b>PIPPISING:</b>			
Highway 11.....	\$ 120,321.43	\$ 321,490.94	\$ 441,812.37
" " 17.....	981,181.94	221,003.40	1,202,185.34
" " 60.....	1,274,310.20	125,457.41	1,399,767.61
" " 63.....	166,426.80	100,276.65	266,703.45
" " 64.....	608,676.43	109,440.45	718,116.88
" " 94.....	8,710.04	16,818.90	25,528.94
" " 123.....	6,803.29	13,078.24	19,881.53
" " 127.....	43,444.58	28,436.47	71,881.05



DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
NIPPISSING (Cont'd)			
Sec. Hwy. 514 .....	160.18	1,915.88	2,076.06
" " 523 .....	25,667.40	25,813.85	51,481.25
" " 528 .....	10.60	3,447.99	3,458.59
" " 531 .....	232,412.25	5,611.74	238,023.99
" " 533 .....	289,341.46	58,643.65	347,985.11
" " 539 .....	4,500.39	48,475.14	52,975.53
" " 539A .....	1,166.94	1,474.66	2,641.60
" " 630 .....	123,628.73	45,479.77	169,108.50
" " 656 .....	3,891.78	3,292.63	7,184.41
Tertiary Road 805 .....	713.85	17,591.63	18,305.48
Sidewalks:			
Township of Field .....	750.00	—	750.00
Connecting Links:			
City of North Bay .....	114,571.66	—	114,571.66
Town of Sturgeon Falls .....	226,150.90	2,449.43	228,600.33
Unincorporated Township Roads:			
Statute Labour Board .....	68,685.35	35,062.46	103,747.81
Local Road Board .....	17,997.58	19,073.27	37,070.85
Special—Settlers .....	—	4,088.97	4,088.97
Development Roads .....	82,314.68	17,750.44	100,065.12
Lands and Buildings .....	110,986.17	15,825.95	126,812.12
Miscellaneous Surveys .....	14.52	—	14.52
	<u>\$4,512,839.15</u>	<u>\$1,241,999.92</u>	<u>\$5,754,839.07</u>
PARRY SOUND:			
Highway 11 .....	\$ 94,309.99	\$ 159,560.96	\$ 253,870.95
" 69 .....	482,349.50	177,676.56	660,026.06
" 124 .....	300,571.16	128,681.29	429,252.45
Sec. Hwy. 510 .....	—	2,803.76	2,803.76
" " 518 .....	182,735.69	173,398.80	356,134.49
" " 520 .....	157,194.27	77,422.34	234,616.61
" " 522 .....	404,263.58	92,682.53	496,946.11
" " 524 .....	—	7,796.74	7,796.74
" " 526 .....	84.98	10,800.34	10,885.32
" " 529 .....	2,032.32	42,613.26	44,645.58
" " 529A .....	5,385.57	7,830.18	13,215.75
" " 532 .....	11,239.89	25,374.20	36,614.09
" " 534 .....	35,451.50	56,261.51	91,713.01
" " 559 .....	898.03	25,845.74	26,743.77
" " 592 .....	1,398.29	17,906.30	19,304.59
" " 612 .....	135.55	6,207.49	6,343.04
" " 632 .....	13,924.35	14,837.48	28,761.83
" " 644 .....	246.33	2,534.34	2,780.67
" " 645 .....	22,945.36	6,476.40	29,421.76
" " 654 .....	49,574.83	38,319.42	87,894.25
Connecting Links:			
Town of Parry Sound .....	—	2,783.72	2,783.72
Village of Rosseau .....	—	288.24	288.24
Unincorporated Township Roads:			
Statute Labour Board .....	91,359.83	84,380.26	175,740.09
Local Road Board .....	—	3,394.77	3,394.77
Special—Settlers .....	—	98.95	98.95
Special—Indian Reserves .....	—	98.85	98.85
Development Roads .....	196,002.80	1,605.27	197,608.07
Lands and Buildings .....	80,131.17	3,617.61	83,748.78
Miscellaneous Surveys .....	460.58	—	460.58
	<u>\$2,132,695.57</u>	<u>\$1,171,297.31</u>	<u>\$3,303,992.88</u>
RAINY RIVER:			
Highway 11 .....	\$1,751,869.05	\$ 183,771.27	\$1,935,640.32
" 71 .....	305,073.76	43,062.26	348,136.02
Sec. Hwy. 600 .....	32,542.48	84,936.21	117,478.69
" " 602 .....	140,840.48	38,129.50	178,969.98
" " 611 .....	322.54	14,984.88	15,307.42
" " 613 .....	47,900.50	37,569.75	85,470.25

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
RAINY RIVER (Cont'd)			
“ “ 615.....	1,095.71	17,095.64	18,191.35
“ “ 617.....	193.65	21,995.96	22,189.61
“ “ 619.....	—	27,211.50	27,211.50
“ “ 621.....	12,583.64	64,337.77	76,921.41
“ “ 622.....	—	10,581.76	10,581.76
“ “ 623.....	14,168.08	8,297.99	22,466.07
“ “ 633.....	—	3,627.21	3,627.21
Connecting Links:			
Town of Fort Frances.....	39.46	9,392.72	9,432.18
Town of Rainy River.....	—	107.36	107.36
Unincorporated Township Roads:			
Statute Labour Board.....	—	11,390.67	11,390.67
Special—Settlers.....	—	297.57	297.57
Special—Indian Reserves.....	—	8,451.62	8,451.62
Development Roads.....	33,278.81	—	33,278.81
Lands and Buildings.....	79,746.62	3,443.81	83,190.43
Miscellaneous Surveys.....	113.75	—	113.75
	<u>\$2,419,768.53</u>	<u>\$ 588,685.45</u>	<u>\$3,008,453.98</u>
SUDBURY:			
Highway 17.....	\$1,220,567.02	\$ 304,558.77	\$1,525,125.79
“ “ 64.....	1,140,563.21	54,618.61	1,195,181.82
“ “ 68.....	14,833.74	54,393.52	69,227.26
“ “ 69.....	196,185.32	236,482.21	432,667.53
“ “ 101.....	915,065.27	141,707.46	1,056,772.73
“ “ 129.....	456,013.02	83,493.18	539,506.20
“ “ 144.....	1,034,733.44	132,390.81	1,167,124.25
Sec. Hwy. 528.....	81.82	25,170.13	25,251.95
“ “ 528A.....	718.08	7,094.76	7,812.84
“ “ 535.....	136,850.99	62,011.35	198,862.34
“ “ 536.....	148.46	9,424.90	9,573.36
“ “ 537.....	95,666.78	45,026.58	140,693.36
“ “ 539.....	186.84	29,404.31	29,591.15
“ “ 541.....	266,688.49	56,865.67	323,554.16
“ “ 541A.....	17.84	5,025.10	5,042.94
“ “ 543.....	7,671.48	14,286.89	21,958.37
“ “ 544A.....	—	2,368.41	2,368.41
“ “ 545.....	5,817.73	43,340.44	49,158.17
“ “ 549.....	98,841.71	40,328.44	139,170.15
“ “ 553.....	18.20	5,030.65	5,048.85
“ “ 560.....	18,881.45	89,836.99	108,718.44
“ “ 560A.....	—	4,385.50	4,385.50
“ “ 606.....	88,462.07	2,877.76	91,339.83
“ “ 607.....	138,814.85	29,950.57	168,765.42
“ “ 607A.....	75.62	2,576.30	2,651.92
“ “ 616.....	5,044.82	1,195.43	6,240.25
“ “ 634.....	67,648.34	27,494.46	95,142.80
“ “ 637.....	3,152.31	57,628.78	60,781.09
“ “ 651.....	16,034.06	—	16,034.06
Tertiary Road 805.....	1,037.40	6,648.95	7,686.35
“ “ 806.....	2,029.62	1,788.11	3,817.73
Connecting Links:			
City of Sudbury.....	258,442.81	—	258,442.81
Town of Capreol.....	2,047.60	1,156.32	3,203.92
Town of Espanola.....	—	1,911.06	1,911.06
Unincorporated Township Roads:			
Statute Labour Board.....	22,905.73	105,830.64	128,736.37
Local Road Board.....	2,395.42	7,338.17	9,733.59
Special—Settlers.....	135.31	8,589.43	8,724.74
Special—Indian Reserves.....	—	672.34	672.34
Development Roads.....	93,584.54	7,765.13	101,349.67
Lands and Buildings.....	158,028.83	23,491.94	181,520.77
Miscellaneous Surveys.....	9,281.04	—	9,281.04
	<u>\$6,478,671.26</u>	<u>\$1,734,160.07</u>	<u>\$8,212,831.33</u>

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>TIMISKAMING:</b>			
Highway 11.....	\$ 75,395.92	\$ 262,256.23	\$ 337,652.15
"    65.....	549,266.52	153,823.48	703,090.00
"    66.....	52,992.52	99,096.58	152,089.10
"    101.....	476.85	27,746.39	28,223.24
"    112.....	6,399.03	30,938.51	37,337.54
"    144.....	820,041.75	—	820,041.75
Sec. Hwy. 558.....	36,129.50	32,098.22	68,227.72
"    560.....	81,399.26	165,860.14	247,259.40
"    562.....	—	13,863.50	13,863.50
Sec. Hwy. 564.....	20.88	12,574.83	12,595.71
"    566.....	17,314.64	23,115.53	40,430.17
"    567.....	41,335.56	40,665.54	82,001.10
"    568.....	2,086.50	2,115.31	4,201.81
"    569.....	39,260.00	46,170.48	85,430.48
"    570.....	3,015.86	2,559.70	5,575.56
"    571.....	—	5,800.73	5,800.73
"    573.....	54.77	25,156.19	25,210.96
"    624.....	142,327.10	51,641.32	193,368.42
"    640.....	3,005.94	3,155.85	6,161.79
"    650.....	225,034.48	8,809.94	233,844.42
Special Agreement:			
Moose Creek Bridge (Township of Casey).....	66,081.62	—	66,081.62
Connecting Links:			
Township of Teck.....	—	3,999.62	3,999.62
Town of Cobalt.....	949.05	3,641.52	4,590.57
Town of Haileybury.....	195,844.15	4,119.09	199,963.24
Town of New Liskeard.....	—	5,221.29	5,221.29
Unincorporated Township Roads:			
Statute Labour Board.....	4,361.76	44,933.16	49,294.92
Local Road Board.....	361.47	5,949.68	6,311.15
Special—Settlers.....	1,550.15	4,200.00	5,750.15
Development Roads.....	55,046.90	—	55,046.90
Lands and Buildings.....	62,437.89	10,422.06	72,859.95
Miscellaneous Surveys.....	4,136.64	—	4,136.64
	<u>\$2,486,326.71</u>	<u>\$1,089,334.89</u>	<u>\$3,575,661.60</u>
<b>THUNDER BAY:</b>			
Highway 11.....	\$ 98,081.73	\$ 591,835.16	\$ 689,916.89
"    11A.....	22,395.30	61,134.96	83,530.26
"    17.....	1,217,878.17	418,953.75	1,636,831.92
"    61.....	2,490.12	44,061.26	46,551.38
"    130.....	14,695.17	37,704.16	52,399.33
Sec. Hwy. 580.....	159.08	5,188.62	5,347.70
"    582.....	—	4,105.38	4,105.38
"    584.....	879.08	62,047.14	62,926.22
"    584A.....	—	1,303.34	1,303.34
"    585.....	8,265.83	31,509.27	39,775.10
"    586.....	980.97	3,286.24	4,267.21
"    587.....	14,324.27	55,204.71	69,528.98
"    588.....	26,987.86	70,769.47	97,757.33
"    589.....	16,586.62	46,479.60	63,066.22
"    590.....	46,456.35	55,341.20	101,797.55
"    591.....	16,602.40	6,938.22	23,540.62
"    593.....	34,920.36	26,679.23	61,599.59
"    595.....	375.74	61,053.84	61,429.58
"    597.....	163.88	22,006.55	22,170.43
"    599.....	21,246.87	64,126.57	85,373.44
"    608.....	103.18	21,812.06	21,915.24
"    614.....	165,766.60	78,549.41	244,316.01
"    625.....	21,647.62	49,928.14	71,575.76
"    627.....	—	8,156.53	8,156.53
"    628.....	321,916.54	7,375.04	329,291.58
"    643.....	158.96	7,949.25	8,108.21
Tertiary Road 800.....	—	23,934.39	23,934.39
"    801.....	8,049.26	7,544.76	15,594.02
"    802.....	2,300.80	12,615.21	14,916.01

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>HUNDER BAY (Cont'd)</b>			
Industrial Road:			
Caramat to Manitouwadge...	—	46,234.71	46,234.71
Connecting Links:			
City of Fort William ..	72,554.60	6,351.68	78,906.28
Town of Geraldton ..	—	5,843.27	5,843.27
Unincorporated Township Roads:			
Statute Labour Board	23,893.72	49,926.72	73,820.44
Local Road Board	54,454.06	76,720.74	131,174.80
Special—Settlers....	Cr. 61.68	244.93	183.25
Development Roads	596.12	—	596.12
Lands and Buildings	59,739.39	21,451.45	81,190.84
Weigh Scales.....	1,879.74	3,938.49	5,818.23
Miscellaneous Surveys ..	1,191.36	—	1,191.36
	<u>\$ 2,277,680.07</u>	<u>\$ 2,098,305.45</u>	<u>\$ 4,375,985.52</u>
<b>MANITOULIN:</b>			
Highway 68.....	\$ 944,486.08	\$ 208,227.06	\$ 1,152,713.14
Sec. Hwy. 540.....	256,384.20	204,366.12	460,750.32
“ “ 540A.....	—	6,036.23	6,036.23
“ “ 542.....	101,676.37	122,591.54	224,267.91
“ “ 542A.....	—	2,788.96	2,788.96
“ “ 551.....	10,127.17	39,376.84	49,504.01
“ “ 637.....	63,488.38	70,095.36	133,583.74
Connecting Link:			
Town of Little Current.....	370,324.61	—	370,324.61
Unincorporated Township Roads:			
Statute Labour Board .....	60.42	14,769.47	14,829.89
Lands and Buildings .....	86,250.03	2,691.79	88,941.82
	<u>\$ 1,832,797.26</u>	<u>\$ 670,943.37</u>	<u>\$ 2,503,740.63</u>
<b>COUNTY AND DISTRICT TOTALS .....</b>	<u>\$168,819,731.36</u>	<u>\$39,252,320.57</u>	<u>\$208,072,051.93</u>
undry unallocated, District Office, Administrative, Engineering, Building, Inventory Charges, etc.....	\$ 2,485,904.44	\$ 8,770,297.61	\$ 11,256,202.05
<b>TOTAL EXPENDITURES.....</b>	<u>\$171,305,635.80</u>	<u>\$48,022,618.18</u>	<u>\$219,328,253.98</u>



## APPENDIX No. 2a

**Development Road Expenditure in Municipalities by County and Territorial Districts**  
**(Authorized by Part XI of The Highway Improvement Act)**

**April 1, 1965 to March 31, 1966**

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
BRANT					
647	Cockshutt Road.....	5.6	County	\$406,475.63	\$ 406,475.63
BRUCE					
674	Hanover-Chesley.....	9.0	County	\$ 15,755.74	\$ 561,773.23
758	County Road 3 (Part).....	12.3	County	543,334.37	
D 799	Ashfield-Huron Townline.....	1.25	Ashfield-Huron	2,566.45	
819	County Road 13A (Part).....	0.9	County	116.67	
CARLETON					
717	River Road.....	3.9	North Gower	\$ 17,210.33	\$ 335,939.29
754	Dwyer Hill Road.....	6.9	Goulbourn	190,477.94	
780	March/Torbolton Townline (Part)..	1.2	Torbolton and March	68,415.41	
822	County Road 26 to Marlborough/ Goulbourn B.....	4.8	Marlborough	6,974.08	
823	Road from south Boundary to Hwy. 44.....	5.8	Huntley	7,964.68	
827	Concession VII/VIII .....	10.1	Osgoode	44,896.85	
DUFFERIN					
609	Hornings Mills-Terre Nova (Part)..	7.1	Mulmur	\$125,602.00	\$ 660,331.35
610	Hornings Mills Bridge.....	0.9	Melancthon	3,232.92	
777	County Road 10 (Part).....	8.0	County	531,496.43	
ELGIN					
692	County Road 36 (Part) .....	4.2	County	\$ 41,701.92	\$ 241,482.80
785	Griffin's Corners Easterly.....	3.5	Bayham	199,780.92	
FRONTENAC					
311R	McKnight Road.....	2.5	Hinchinbrooke	\$ 9,305.25	\$ 1,155,718.60
415	Snow Road-Ompah .....	15.0	Palmerston, North and South Canonto	197,261.33	
655	Crow Lake Easterly.....	4.0	Oso	198,854.12	
675	Otter Lake Northerly.....	2.7	Loughborough	15,267.51	
765	County Road 16A (Part).....	3.5	Howe Island	109,134.26	
771	Kennebec Twp. Road (Part) .....	2.7	Kennebec	87,564.29	
774	County Road 9 (Part).....	6.8	County	487,680.21	
806	Road from Hwy. 7 to Olden- Hinchinbrooke B. ....	9.5	Olden	18,345.85	
826	County Road 12 (Part) .....	7.3	County	32,305.87	
GREY					
715	Road to Ontario Hospital .....	2.1	Sydenham	\$119,479.69	\$ 264,137.70
721	County Road 18 and 5 (Part) .....	4.0	County	100,432.11	
783	County Road 13 .....	25.0	County	44,225.98	

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>HALDIMAND</b>					
752	County Road 12M & 12N, Old Indian Line.....	5.2	County	\$ 27,701.72	
791	County Road 12 (Part) Old Indian Line.....	5.5	County	163,624.51	
				<hr/>	\$ 191,326.23
<b>HASTINGS</b>					
588	County Road 1 (Part).....	14.2	County	\$ 6,299.86	
591R	Deltor Road (Part).....	2.1	Dungannon	14,079.71	
711	County Road 4, Frankford- Hwy. 401.....	5.1	County	144,548.98	
740	Balsam Lake-Jones Boundary.....	4.3	Bangor, Wicklow and McClure	100,701.90	
801	Weslemkoon Road.....	11.0	Tudor and Cashel	28,154.28	
802	Road from County Road 12A to Hwy. 62.....	2.1	Madoc	8,814.48	
804	Road in Lots 23 and 24 Conc. X....	0.9	Wollaston	5,946.63	
805	Road Along C.N.R. Right-of-way (Baptiste Stat.).....	2.9	Herschel	21,183.97	
824	County Road 12 (Part).....	7.2	County	17,846.21	
836	Road Between Lots 20/21 (Part)....	0.4	Carlow	5,138.74	
				<hr/>	\$ 352,714.76
<b>HURON</b>					
669	Brussels to Hwy. 86.....	6.25	County	\$ 1,227.71	
734	Stephen/McGillivray Townline.....	3.0	McGillivray and Stephen	92,171.27	
759	County Road 4 (Part).....	10.1	County	449,146.04	
781	Conc. II/III (Part).....	2.5	McKillop	50,048.68	
799	Ashfield-Huron Townline.....	1.25	Ashfield-Huron	2,566.45	
				<hr/>	\$ 595,160.15
<b>KENT</b>					
697	County Road 1 (Part).....	10.0	County	\$556,829.72	
756	Proposed Kent County Road.....	4.5	County	372,527.18	
				<hr/>	\$ 929,356.90
<b>LAMBTON</b>					
471	Alvinston-Courtright Road.....	30.75	County	cr. 34.36	
682	Hwy. 402-County Road 4.....	2.25	Sarnia	\$172,083.06	
724	County Road 12 and 6A.....	6.5	County	129,153.30	
733	Tri County Bridge to Hwy. 21.....	3.7	Bosanquet	281,491.55	
				<hr/>	\$ 582,693.55
<b>LANARK</b>					
613	Fallbrook Westerly.....	8.0	Bathurst	\$ 36,206.32	
654	Second Line Road.....	6.65	Sherbrooke South	75,593.91	
741	County Road 15 Pakenham-Waba....	9.5	County	307,356.26	
779	Black Creek Road.....	6.0	Lavant	3,346.61	
820	Proposed County Road.....	4.2	County	17,969.95	
821	Proposed County Road.....	2.0	County	8,210.03	
				<hr/>	\$ 448,683.09
<b>LEEDS AND GRENVILLE</b>					
285R	Escott-Rockport Road.....	5.7	Escott Front	\$314,795.55	
572	Warburton-Long Point.....	6.0	County	211,663.91	
642	County Road 16 (Part).....	8.5	County	130,464.55	
689	Yonge Boundary to Hwy. 29.....	7.0	Elizabethtown	167,361.67	
705	Conc. V/VI Road.....	1.8	Kitley	104,061.14	
728	Twp. Boundary Westerly to Oakleaf.....	1.1	Rear of Leeds and Landsowne	29,251.08	

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>LEEDS AND GRENVILLE (Cont'd)</b>					
729	County Road 5B W'ly to Twp. Boundary .....	0.9	Rear of Yonge and Escott	25,507.03	
739	Sidroad 6/7.....	3.5	South Gower	114,055.02	
792	County Road 5A, Mallorytown Landing Road.....	2.1	County	196,423.89	
					\$ 1,293,583.84
<b>LENNOX AND ADDINGTON</b>					
57R	Centreville-Enterprise Road.....	5.0	Camden East	\$ 27,008.16	
626	Tamworth Easterly Road.....	4.0	Sheffield	103,718.71	
731	County Road 5 (Part) .....	2.9	County	274,908.10	
732	Centreville-Hwy. 401.....	10.8	County	95,069.52	
748	Flinton to Hastings Boundary.....	3.8	Kaladar, Anglesea and Effingham	86,042.23	
761	Dorland-Sir John A. Macdonald's Monument.....	3.75	Adolphustown	2,229.58	
					\$ 588,976.30
<b>LINCOLN</b>					
A 683	Lincoln-Welland.....	14.4	County	\$287,981.75	
770	St. David's Road (Part).....	0.5	Niagara	11,183.53	
776	Coon Road (Part).....	0.8	Niagara	8,811.59	
787	South Chippawa Road.....	10.1	Caistor	25,812.42	
					\$ 333,789.29
<b>MIDDLESEX</b>					
B 724	County Road 12 & 6A.....	6.5	County	\$ 95,805.85	
C 734	Stephen/McGillivray Towline.....	3.0	McGillivray and Stephen	92,171.28	
					\$ 187,977.13
<b>NORFOLK</b>					
684	County Road 9, Hwy. 24S.....	8.4	County	\$326,757.25	
					\$ 326,757.25
<b>NORTHUMBERLAND AND DURHAM</b>					
673	Concession II Road.....	1.5	Cramahe	\$ 4,268.59	
678	County Road 18, Hwy. 401 Northerly .....	2.25	County	42,969.32	
694	Wooler Road.....	4.4	County	23,703.86	
703	Healey's Falls Road.....	4.4	Seymour	58,384.07	
704	Roseneath Easterly.....	2.9	Alnwick	170,120.94	
706	Base Line Road.....	5.4	Darlington	277,496.47	
725	Lots 6/7, Concession B, A and I.....	2.8	Murray	67,405.46	
818	County Road 70 (Part).....	1.45	County	5,283.11	
					\$ 649,631.82
<b>ONTARIO</b>					
681	Thickson Road (Part).....	6.3	County	\$216,312.13	
769	County Road 21 (Part).....	5.2	County	12,546.97	
816	Airport Road .....	1.25	Rama	29,938.99	
					\$ 258,798.09
<b>OXFORD</b>					
793	Lass Bridge .....	—	Blenheim	\$ 1,307.54	
794	Wolverton Bridge.....	—	Blenheim	993.30	
					\$ 2,300.84
<b>PEEL</b>					
744	Twentieth Sideroad.....	5.1	Albion	\$230,622.37	
					\$ 230,622.37
<b>PERTH</b>					
716	County Road 6-Hwy. 23-19 .....	8.0	County	\$259,486.67	
					\$ 259,486.67

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>PETERBOROUGH</b>					
587R	Havelock-Rush Point.....	17.7	Belmont and Methuen	\$405,067.17	
659	Ninth Line Road.....	12.0	Dummer	155,821.03	
666	Sixth Line Road.....	8.0	Douro	64,154.81	
700	Stoney Lake North Shore Road.....	5.5	Burleigh	11,049.91	
701	County Road 3-Mud Lake I.R.....	2.7	Smith	2,518.46	
745	County Road 5 (Part).....	5.6	County	111,566.11	
				<hr/>	\$ 750,177.49
<b>PRESCOTT AND RUSSELL</b>					
621	Vars to Osgoode Twp. Bdry.....	4.5	Cumberland	\$ 729.46	
650	County Road 13 (Part).....	5.0	County	6,396.82	
773	County Road 2 (Part).....	16.0	County	359,747.66	
789	County Road 18.....	6.2	County	15,064.69	
				<hr/>	\$ 381,938.63
<b>PRINCE EDWARD</b>					
746	County Road 15.....	13.0	County	\$517,117.98	
817	Proposed County Road.....	8.4	County	22,151.89	
				<hr/>	\$ 539,269.87
<b>RENFREW</b>					
117R	Combermere-Rockingham.....	6.75	Radcliffe	\$122,214.41	
541	Admaston-Bagot Townline.....	10.4	Admaston and Bagot	107,855.49	
676	River Road.....	13.8	County	439,295.87	
738	Hardwood Lake-Palmer Rapids.....	7.0	Raglan	144,243.85	
747	Alice-Petawawa Townline.....	5.0	Alice, Fraser and Petawawa	49,316.22	
766	Gillies Mill Road.....	3.2	McNab	Cr. 125.00	
795	Barry's Bay Road.....	9.1	Sherwood, Jones and Burns	23,702.12	
796	Opeongo Road.....	10.0	Sebastopol	17,080.86	
797	Opeongo Road (Part).....	7.6	Brudenell and Lyndoch	10,811.42	
798	Ruby Road.....	7.6	South Algona	10,069.11	
				<hr/>	\$ 924,464.35
<b>SIMCOE</b>					
202R	Champlain Road.....	4.0	Tiny	\$ 4,318.29	
216R	Oro-Medonte Townline.....	7.0	Oro and Medonte	3,885.88	
259R	Minesing to Hwy. 90.....	7.2	Vespra	1,106.20	
581	Essa-Innisfil Townline.....	4.2	Essa and Innisfil	11,269.87	
695	County Road 17 (Part).....	9.2	County	286,411.90	
760	Tenth Sideroad.....	11.6	Tecumseth	23,951.77	
810	County Road 22 (Part).....	6.4	County	29,869.60	
				<hr/>	\$ 360,813.51
<b>STORMONT, DUNDAS AND GLENGARRY</b>					
543R	Concession VI/VII Road.....	1.5	Williamsburg	\$ 10,754.20	
559	Concession IV/V.....	4.5	Lochiel	20,305.29	
719	Lots 12/13, Concession II-VIII.....	6.0	Mountain	34,652.88	
722	County Road 7 (Part).....	7.0	County	129,420.11	
768	Brinston Easterly Road.....	3.8	Matilda	124,363.37	
788	County Road 24 (Part).....	9.4	County	23,155.62	
				<hr/>	\$ 342,651.47
<b>VICTORIA</b>					
517R	Pigion Lake Road.....	14.5	County	\$ 2,881.05	
718	Bobcaygeon to Fenelon Falls.....	9.5	County	306,602.33	
775	County Road 28 (Part).....	5.6	County	243,806.04	
				<hr/>	\$ 553,289.42



ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>WELLAND</b>					
A 683	Lincoln-Welland.....	14.4	County	\$293,606.29	\$ 293,606.29
<b>WELLINGTON</b>					
712	County Road 65.....	4.7	County	\$106,333.47	
726	County Road 58 (Part).....	4.4	County	235,509.56	
727	County Road 69 (Part).....	2.9	County	98,004.50	
736	Hwy. 6 to Victoria Bridge.....	2.2	Guelph	71,232.73	
825	County Road 58 (Part).....	10.4	County	13,093.54	
					\$ 524,173.80
<b>YORK</b>					
735	County Road 31 (Part).....	9.5	County	\$214,775.45	\$ 214,775.45
<b>ALGOMA</b>					
808	Road between Lots 10 and 11 Southerly.....	1.4	Jocelyn	\$ 6,588.20	
815	Little Rapids Bridge.....	0.1	Thessalon	717.65	
					\$ 7,305.85
<b>COCHRANE</b>					
693	Back Road.....	6.0	Tisdale	\$139,165.76	
772	Oil Tank Road.....	5.0	Calvert	37,884.83	
784	Aunor-Delnite Road (Part).....	0.6	Tisdale	8,930.77	
					\$ 185,981.36
<b>HALIBURTON</b>					
657	Minden Bay Road.....	3.75	Sherborne Et A1	\$ 97,928.02	\$ 97,928.02
<b>MUSKOKA</b>					
409	Rousseau-Huntsville Road.....	9.5	Cardwell	\$ 74,742.81	
594	Huntsville-Rousseau (Part).....	8.0	Stisted and Stephenson	38,926.61	
644	12 Mile Bay Road.....	8.0	Freeman	94,990.80	
667	Seeley Brunel Road.....	3.7	Brunel	131,555.46	
671	Black Bridge-Mathiasville.....	3.25	Draper	163,258.82	
702	Coopers Falls-Housey Rapids.....	5.0	Ryde	19,680.61	
762	Rotary Beach Road.....	1.2	Chaffey	32,513.29	
					\$ 555,668.40
<b>NIPISSING</b>					
629	Concession VI/VII Road.....	2.5	Bonfield	\$ 10,783.26	
656	Caderette Corners-Hwy. 64.....	4.15	Caldwell	17,896.39	
737	Concession XII/XIII Road.....	1.25	Chisholm	24,792.50	
743	Trout Lake Road.....	4.5	East Ferris	16,252.26	
778	Calvin/Papineau Townline (Part).....	1.2	Calvin and Papineau	17,750.44	
782	Powassan-Rutherglen Road (Part).....	3.6	Bonfield	12,590.27	
					\$ 100,065.12
<b>PARRY SOUND</b>					
34R	Dillon Cove Road.....	10.0	Carling	\$ 54,625.27	
136R	South Himsworth Township Road.....	3.75	South Himsworth	44.90	
614R	Humphrey Bdry. Northerly.....	2.0	Christie	89,048.78	
680	Killbear Park Road.....	5.6	Carling	5,144.11	
708	Burks Falls Easterly and Southerly.....	2.0	Armour	27,591.44	
709	Machar Lake Bridge.....	—	Machar	3,294.18	
755	Concession XVI/XVII.....	1.8	Nipissing	15,301.20	
790	Concession X/XI (Part).....	0.7	Joly	1,926.00	
814	Road between Concession VIII/ IX Opp. Lots 12, 13, 14.....	0.7	Ryerson	632.19	
					\$ 197,608.07

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>RAINY RIVER</b>					
639	Morley/Shenston Townline.....	7.0	Morley	\$ 2,095.18	
757	Dilke/Nelles Boundary Road.....	7.0	Dilke	31,183.63	
				<u>          </u>	\$ 33,278.81
<b>SUDBURY</b>					
530	River Road.....	6.0	Salter, May and Harrow	\$ 38,394.11	
707	Concession IV/V Road.....	5.4	Hagar	46,174.76	
811	Bridge No. 15.....	0.1	Hallam	7,765.13	
812	Caldwell's Bridge.....	0.1	Hallam	5,604.54	
813	Hick's Bridge.....	0.1	Hallam	3,411.13	
				<u>          </u>	\$101,349.67
<b>TIMISKAMING</b>					
685	Kap-Kig-Iwan Provincial Park Road.....	1.3	Evanturel	\$ 13,820.48	
753	Concession II/III Road.....	5.0	Dack	8,601.92	
767	Shannon's Bridge and Approaches..	—	Casey and Brethour	32,624.50	
				<u>          </u>	\$ 55,046.90
<b>THUNDER BAY</b>					
691	Golf Links Road Extension.....	0.75	Shuniah	\$ 208.72	
720	Hwy. 588 Northerly to Concession V/VI.....	0.85	Gillies	31.69	
PE 807	Sideroad 2/3.....	3.5	Conmee	355.71	
		<u>956.25</u>		<u>          </u>	\$ 596.12
					\$17,077,705.69
8003	Stockpile Material.....				<u>Cr. 4,927.60</u>
					\$17,072,778.09

Development Roads Split into Two Counties:

Lincoln and Welland  
Lambton and Middlesex  
Huron and Middlesex  
Bruce and Huron

## APPENDIX No. 2b

**Unincorporated Townships Statute Labour Board Road Expenditures  
by Territorial Districts  
(Part XII, The Highway Improvement Act)**

**For the Year Ending March 31, 1966**

LOCATION AND NAME	STATUTE LABOUR BOARD EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>ALGOMA</b>				
Aberdeen.....	\$ 1,777.75	\$ 4,292.74	\$ 6,758.55	\$ 12,829.04
Aweres No. 1.....	484.59	966.67	—	1,451.26
Aweres No. 2.....	522.70	838.16	—	1,360.86
Cobden.....	246.45	384.25	—	630.70
Dennis.....	477.47	761.49	—	1,238.96
Deroche.....	99.74	535.00	—	634.74
Fenwick East ½.....	3,757.27	3,343.72	1,148.77	8,249.76
Fenwick and Kars.....	3,271.96	5,290.08	885.14	9,447.18
Galbraith.....	505.39	6,687.59	—	7,192.98
Havilland.....	1,812.88	2,649.73	—	4,462.61
Lewis.....	—	1,758.32	—	1,758.32
Plummer.....	2,550.20	4,810.80	2,000.00	9,361.00
Ranger Lake Road.....	2,916.90	13,040.30	—	15,957.20
Rose West ½.....	68.00	1,874.68	—	1,942.68
Shedden.....	3,799.87	9,861.14	—	13,661.01
Shields and Gaudette.....	531.55	419.93	—	951.48
Striker.....	510.50	656.11	—	1,166.61
Victoria.....	5,360.85	5,216.03	—	10,576.88
	<u>\$ 28,694.07</u>	<u>\$ 63,386.74</u>	<u>\$ 10,792.46</u>	<u>\$102,873.27</u>
<b>COCHRANE</b>				
Brower West.....	\$ 996.12	\$ 1,881.00	\$ —	\$ 2,877.12
Calder.....	732.09	1,130.85	844.44	2,707.38
Casgrain.....	125.40	1,065.45	—	1,190.85
Clute West.....	2,337.24	3,756.98	17,800.63	23,894.85
Clute Calder.....	2,337.73	6,750.85	819.52	9,908.10
Devitt.....	1,136.52	1,992.22	—	3,128.74
Eilber and Barker.....	434.30	358.00	—	792.30
Eilber and Devitt.....	3,953.86	4,617.64	—	8,571.50
Evelyn.....	270.00	1,325.76	—	1,595.76
Fournier.....	1,704.76	3,263.08	—	4,967.84
Fox, Brower and Pyne.....	903.64	2,778.08	11,484.47	15,166.19
German and Mathison.....	2,994.49	4,040.95	—	7,035.44
Hanlan and Way.....	2,461.75	2,573.03	—	5,034.78
Idington and McCrea.....	2,433.65	1,088.83	—	3,522.48
Idington, Williamson and Owen.....	1,278.76	790.81	—	2,069.57
Kendall No. 1.....	2,452.42	1,918.62	—	4,371.04
Kendall No. 2.....	1,704.88	2,921.57	3,013.72	7,640.17
Kendal and Devitt.....	2,367.89	2,397.11	4,579.18	9,344.18
Kennedy.....	1,161.37	1,690.43	11,868.22	14,720.02
Lamarche.....	3,437.14	4,579.10	519.30	8,535.54
Leclair Ave.....	300.52	461.58	—	762.10
Lowther.....	1,135.27	1,925.14	12,540.47	15,600.88
Lowther and Way.....	3,216.21	4,709.92	—	7,926.13
Newmarket.....	956.56	1,806.88	13,989.59	16,753.03
Nordica, Mcevey and McCann.....	326.69	871.33	—	1,198.02
Ogden.....	28.55	221.15	—	249.70
Owens N.E. and Williamson S.E.....	3,155.47	1,521.26	7,657.07	12,333.80
Shaw.....	361.07	1,862.28	—	2,223.35
Sheraton and Macklem.....	1,683.59	1,137.02	—	2,820.61
Way Centre.....	3,065.87	4,737.04	4,518.93	12,221.84
	<u>\$ 49,453.81</u>	<u>\$ 70,173.96</u>	<u>\$ 89,535.54</u>	<u>\$209,163.31</u>

LOCATION AND NAME	STATUTE	DEPARTMENT	DEPARTMENT	TOTAL
	LABOUR BOARD EXPENDITURE ORDINARY	EXPENDITURE ORDINARY	EXPENDITURE CAPITAL	
KENORA				
Aubrey East.....	\$ 347.63	\$ 879.31	—	\$ 1,226.94
Britton.....	570.97	1,546.35	—	2,117.32
Colenso, Redvers E. and Wabigoon....	413.38	517.79	—	931.17
Drayton Reserve.....	1,984.48	2,454.47	—	4,438.95
Eton.....	2,148.60	2,820.32	—	4,968.92
Melgund.....	589.39	1,874.13	—	2,463.52
Mutrie.....	2,012.68	3,922.94	—	5,935.62
Pellatt No. 1.....	1,579.58	1,322.84	—	2,902.42
Pellatt No. 2.....	1,143.19	2,049.79	\$ 6,957.60	10,150.58
Redditt.....	859.47	235.36	—	1,094.83
UT. W. of Redditt.....	380.82	895.26	—	1,276.08
Rowell.....	378.67	499.53	—	878.20
Rugby.....	1,040.12	716.86	—	1,756.98
Southworth.....	1,224.72	2,402.65	—	3,627.37
UT. N. of Umback.....	3,262.59	3,638.15	—	6,900.74
Van Horne.....	4,139.56	2,623.36	—	6,762.92
Vermillion Additional.....	1,528.65	2,718.74	—	4,247.39
Wabigoon W. and Redvers W.....	803.71	1,743.76	—	2,547.47
Wainwright and Eton.....	1,473.16	3,098.39	—	4,571.55
Zealand No. 1.....	1,090.91	2,275.16	—	3,366.07
Zealand No. 3.....	1,124.37	1,695.72	—	2,820.09
	<u>\$ 28,096.65</u>	<u>\$ 39,930.88</u>	<u>\$ 6,957.60</u>	<u>\$ 74,985.13</u>
MUSKOKA				
Baxter.....	\$ 15,265.70	\$ 7,378.29	—	\$ 22,643.99
Go Home Lake.....	3,742.57	7.64	—	3,750.21
N. Gibson Lake.....	175.00	28.80	—	203.80
Sinclair.....	3,310.60	4,967.28	—	8,277.88
S. Gibson.....	650.00	1,424.99	—	2,074.99
	<u>\$ 23,143.87</u>	<u>\$ 13,807.00</u>	<u>—</u>	<u>\$ 36,950.87</u>
NIPISSING				
Badgerow No. 1.....	\$ 1,688.73	\$ 2,304.91	\$ 17,993.21	\$ 21,986.85
Bastedo.....	907.74	1,094.42	12,514.50	14,516.66
Crerar and N.W. Gibbons.....	—	625.50	—	625.50
Dickens.....	1,022.08	1,567.37	—	2,589.45
Falconer, S. Loudon and S.E. Haddo..	2,213.18	3,399.78	—	5,612.96
Gibbons South.....	1,394.97	1,356.60	—	2,751.57
Kirkpatrick.....	5,811.94	9,197.47	29,231.76	44,241.17
MacPherson, N. Loudon and N.E. Haddo.....	7,512.67	8,318.17	5,561.51	21,392.35
Murchison.....	35.64	1,620.70	—	1,656.34
Sabine.....	1,735.31	3,431.10	—	5,166.41
Tasso Lake.....	518.00	867.11	—	1,385.11
West Oxbow Lake.....	550.00	1,059.75	3,384.37	4,994.12
Wyse and Poitras.....	265.68	219.58	—	485.26
	<u>\$ 23,655.94</u>	<u>\$ 35,062.46</u>	<u>\$ 68,685.35</u>	<u>\$127,403.75</u>
PARRY SOUND				
Bethune.....	\$ 3,587.26	\$ 3,196.26	\$ 1,127.70	\$ 7,911.22
Blair and Mowat.....	1,031.61	439.61	—	1,471.22
Conger North.....	2,015.35	1,130.49	—	3,145.84
Conger South.....	2,883.31	3,716.94	—	6,600.25
Croft.....	3,672.25	3,835.58	—	7,507.83
Ferguson.....	1,561.76	795.22	—	2,356.98
Ferrie.....	471.47	2,076.64	2,350.70	4,898.81
Gurd.....	8,018.93	7,090.59	28,602.81	43,712.33
Harrison.....	1,733.22	1,269.65	1,832.82	4,835.69
Laurier.....	2,553.74	2,873.52	5,513.50	10,940.76
Lount.....	4,047.51	5,391.34	13,811.58	23,250.43
McKenzie and Burpee.....	3,516.85	4,199.04	2,967.09	10,682.98
Mills and Hardy.....	10,256.02	9,881.47	8,915.05	29,052.54



LOCATION AND NAME	STATUTE LABOUR BOARD EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>PARRY SOUND (Cont'd)</b>				
Monteith.....	\$ 3,630.04	\$ 2,571.89	\$ —	\$ 6,201.93
Patterson.....	3,023.98	4,353.09	16,198.46	23,575.53
Pringle.....	4,523.27	5,602.68	4,751.31	14,877.26
Proudfoot.....	3,343.91	6,525.24	—	9,869.15
Spence.....	5,563.80	7,286.03	5,288.81	18,138.64
Wallbridge N. and Henvey.....	6,730.71	5,933.44	—	12,664.15
Wallbridge South.....	1,454.90	526.52	—	1,981.42
Wilson and McConkey.....	5,144.30	5,685.02	—	10,829.32
	<u>\$ 78,764.19</u>	<u>\$ 84,380.26</u>	<u>\$ 91,359.83</u>	<u>\$254,504.28</u>
<b>RAINY RIVER</b>				
Dance.....	\$ 1,479.67	\$ 2,753.76	—	\$ 4,233.43
Dewart.....	1,120.03	1,151.72	—	2,271.75
Miscampbell.....	2,398.36	1,163.77	—	3,562.13
Nelles.....	1,597.61	1,677.46	—	3,275.07
Sifton.....	1,457.50	1,320.94	—	2,778.44
Spohn.....	624.12	1,617.90	—	2,242.02
Sutherland.....	1,792.87	1,705.12	—	3,497.99
	<u>\$ 10,470.16</u>	<u>\$ 11,390.67</u>	<u>—</u>	<u>\$ 21,860.83</u>
<b>SUDBURY</b>				
Bigwood.....	\$ 5,974.50	\$ 8,843.84	\$ 8,222.70	\$ 23,041.04
Broder and Dill.....	11,222.09	13,911.43	—	25,133.52
Broder and Tilton.....	5,884.01	5,813.20	1,584.44	13,281.65
Broder West.....	3,641.74	9,346.58	6,391.64	19,379.96
Burwash.....	3,234.69	6,511.14	—	9,745.83
Cartier.....	283.10	455.85	—	738.95
Cleland, Dryden, Hawley and Awrey.....	1,976.28	3,683.48	52.80	5,712.56
Cleland, Dryden and Dill.....	1,059.49	3,168.43	—	4,227.92
Delamerg and Hoskin-Cherriman.....	4,848.54	5,439.05	—	10,287.59
Dieppe.....	—	109.67	—	109.67
Dryden Centre.....	472.96	820.71	119.28	1,412.95
Dryden South.....	709.41	2,542.32	2,010.91	5,262.64
Falconer, S. Louden and S.E. Haddo.....	—	178.93	—	178.93
Foley.....	692.20	1,155.62	—	1,847.82
Foster (Truman).....	533.09	327.97	—	861.06
Henry.....	464.94	1,379.46	174.24	2,018.64
Hess.....	—	605.07	—	605.07
Lorne.....	3,004.24	12,409.47	—	15,413.71
Loughrin S. Qt.....	1,241.43	6,346.27	3,747.55	11,335.25
Louise (Truman).....	3,810.44	6,562.75	—	10,373.19
MacLennan East.....	2,088.06	1,694.60	—	3,782.66
MacLennan West.....	150.17	2,515.24	—	2,665.41
MacPherson, N. Louden and N. E. Haddo.....	—	924.24	—	924.24
McKinnon.....	129.37	1,408.00	—	1,537.37
Merritt.....	1,574.94	2,622.80	—	4,197.74
Norman.....	1,592.06	2,434.70	—	4,026.76
Scollard.....	911.50	1,029.54	—	1,941.04
Secord.....	—	—	170.15	170.15
Servos.....	—	393.77	—	393.77
Shakespeare.....	—	1,068.70	432.02	1,500.72
Street, Scadding, Rathbun.....	1,169.11	2,127.81	—	3,296.92
	<u>\$ 56,668.36</u>	<u>\$105,830.64</u>	<u>\$ 22,905.73</u>	<u>\$185,404.73</u>
<b>TIMISKAMING</b>				
Bayly.....	\$ 408.25	\$ 113.22	—	\$ 521.47
Benoit and Maisonneville.....	318.87	1,651.57	—	1,970.44
Cairo.....	824.18	320.87	—	1,145.05
Cane.....	1,837.00	4,337.92	—	6,174.92
Eby and Blaine.....	1,681.28	1,756.43	—	3,437.71
Eby North.....	237.45	734.25	—	971.70

LOCATION AND NAME	STATUTE	DEPARTMENT	DEPARTMENT	TOTAL
	LABOUR BOARD EXPENDITURE ORDINARY	EXPENDITURE ORDINARY	EXPENDITURE CAPITAL	
THIMISKAMING (Cont'd)				
Grenfell...	\$ 302.20	\$ 506.08	\$ —	\$ 808.28
Henwood.....	3,589.41	3,926.47	—	7,515.88
Ingram .....	2,210.17	4,204.34	\$ 154.98	6,569.49
Keefer .....	602.35	938.05	—	1,540.40
Lebel, Harvey, Kirkland.....	50.15	257.29	—	307.44
Lebel, King, Kirkland.....	1,414.92	2,137.09	—	3,552.01
Marquis N. and Otto S.W.....	1,791.09	2,377.02	—	4,168.11
Marquis S. ....	185.50	1,225.66	—	1,411.16
Marter .....	2,865.89	2,809.47	4,206.78	9,882.14
Nordica McEvoy and McCann ..	653.38	1,742.66	—	2,396.04
Ossian .....	80.84	191.33	—	272.17
Otto .....	1,772.39	3,750.06	—	5,522.45
Pacaud .....	885.11	1,626.77	—	2,511.88
Pacaud-Catharine .....	599.70	928.77	—	1,528.47
Robillard.....	2,736.90	3,971.89	—	6,708.79
Savard .....	1,823.45	3,026.03	—	4,849.48
Sharpe.....	883.79	2,399.92	—	3,283.71
	<u>\$ 27,754.27</u>	<u>\$ 44,933.16</u>	<u>\$ 4,361.76</u>	<u>\$ 77,049.19</u>
HUNDER BAY				
Armstrong .....	\$ 836.81	\$ 4,184.88	\$ 4,194.16	\$ 9,215.85
Dawson Road Lots .....	4,313.50	6,172.02	3,056.81	13,542.33
Devon.....	1,060.91	1,826.04	—	2,886.95
Forbes.....	3,866.71	6,728.29	2,460.57	13,055.57
Goldie .....	494.20	1,120.92	—	1,615.12
Hardwick .....	368.94	621.97	—	990.91
Kilkenny .....	56.00	157.40	—	213.40
Lybster .....	4,438.88	6,837.44	3,844.28	15,120.60
Marks .....	4,199.27	6,466.80	2,471.14	13,137.21
Pearson .....	3,803.87	5,176.12	4,963.24	13,943.23
Rosspport.....	290.86	74.52	—	365.38
Scoble .....	5,377.22	6,548.43	2,903.52	14,829.17
Strange .....	1,163.12	4,011.89	—	5,175.01
	<u>\$ 30,270.29</u>	<u>\$ 49,926.72</u>	<u>\$ 23,893.72</u>	<u>\$ 104,090.73</u>
MANITOULIN				
Campbell .....	\$ 7,364.09	\$ 5,762.87	\$ 60.42	\$ 13,187.38
Dawson .....	1,925.64	1,157.33	—	3,082.97
Mills .....	2,048.75	1,143.28	—	3,192.03
Robinson .....	7,397.47	6,705.99	—	14,103.46
	<u>\$ 18,735.95</u>	<u>\$ 14,769.47</u>	<u>\$ 60.42</u>	<u>\$ 33,565.84</u>
TOTAL STATUTE LABOUR BOARD ROAD EXPENDITURES.....				
	<u>\$375,707.56</u>	<u>\$533,591.96</u>	<u>\$318,552.41</u>	<u>\$1,227,851.93</u>

## APPENDIX No. 2c

**Unincorporated Townships Local Road Board Expenditures by Territorial Districts**  
**(Part XII The Highway Improvement Act),**  
**For the Year Ending March 31, 1966**

LOCATION AND NAME	LOCAL ROADS BOARDS		DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
	EXPENDITURE (DEPOSIT) ORDINARY	DEPARTMENT EXPENDITURE ORDINARY		
<b>ALGOMA</b>				
Aberdeen & McMahon.....	\$ 400.00	\$ 191.60	—	\$ 591.60
Gaudette & Hodgins.....	1,200.00	411.92	\$ 1,603.42	3,215.34
Hawk Junction.....	1,700.00	4,033.31	—	5,733.31
Lewis & Spragge.....	739.65	879.82	301.45	1,920.92
Patton & Montgomery.....	2,048.31	1,208.44	—	3,256.75
Striker.....	1,000.00	918.55	15,399.98	17,318.53
Vankoughnet & Aweres.....	2,083.34	4,138.68	841.19	7,063.21
	<u>\$ 9,171.30</u>	<u>\$ 11,782.32</u>	<u>\$ 18,146.04</u>	<u>\$ 39,099.66</u>
<b>KENORA</b>				
Inglis Lake.....	\$ 775.32	\$ 1,371.37	—	\$ 2,146.69
	<u>\$ 775.32</u>	<u>1,371.37</u>	<u>—</u>	<u>\$ 2,146.69</u>
<b>NIPISSING</b>				
Badgerow No. 2.....	\$ 550.00	\$ 1,991.80	\$ 1,000.00	\$ 3,541.80
Crerar & N. W. Gibbons.....	1,900.00	2,434.34	250.30	4,584.64
Grant & Fell.....	1,500.00	4,251.05	541.39	6,292.44
Hay Lake.....	475.00	1,204.21	500.00	2,179.21
Hugel & S. W. Badgerow.....	2,400.00	4,306.31	1,500.00	8,206.31
Phelps.....	2,800.00	4,885.56	14,205.89	21,891.45
	<u>\$ 9,625.00</u>	<u>\$ 19,073.27</u>	<u>\$ 17,997.58</u>	<u>\$ 46,695.85</u>
<b>PARRY SOUND</b>				
Ahmic Lake.....	\$ 2,270.00	\$ 3,394.77	—	\$ 5,664.77
	<u>\$ 2,270.00</u>	<u>\$ 3,394.77</u>	<u>—</u>	<u>\$ 5,664.77</u>
<b>SUDBURY</b>				
Dieppe.....	\$ 270.85	\$ 946.75	\$ 500.00	\$ 1,717.60
Dill-Secord.....	1,178.42	3,722.42	464.26	5,365.10
Dry Pine Bay.....	470.00	1,043.72	—	1,513.72
Hess.....	250.00	917.00	496.27	1,663.27
Lorne.....	135.00	43.90	—	178.90
Norman.....	200.00	190.41	500.00	890.41
Shakespeare.....	550.00	473.97	434.89	1,458.86
	<u>\$ 3,054.27</u>	<u>\$ 7,338.17</u>	<u>\$ 2,395.42</u>	<u>\$ 12,787.86</u>
<b>TIMISKAMING</b>				
Beauchamp.....	\$ 2,935.86	\$ 5,949.68	\$ 361.47	\$ 9,247.01
	<u>\$ 2,935.86</u>	<u>\$ 5,949.68</u>	<u>\$ 361.47</u>	<u>\$ 9,247.01</u>
<b>THUNDER BAY</b>				
Crescent Point.....	\$ 200.00	\$ 504.70	—	\$ 704.70
Fowler.....	3,500.00	11,447.05	\$ 9,145.20	24,092.25
Gorham.....	9,300.00	18,463.92	11,066.50	38,830.42
Inwood.....	1,700.00	6,492.37	5,885.23	14,077.60
Jacques.....	2,950.00	6,637.59	3,520.42	13,108.01
Lyon.....	1,080.00	1,668.18	—	2,748.18
Portage Bay.....	205.90	698.12	—	904.02
Sibley.....	1,750.00	5,827.40	2,203.96	9,781.36
Stirling.....	1,200.00	3,244.68	—	4,444.68
Upsala.....	2,283.30	5,414.68	9,489.91	17,187.89
Ware.....	9,700.00	16,097.17	13,142.84	38,940.01
West Loon.....	325.00	224.88	—	549.88
	<u>\$ 34,194.20</u>	<u>\$ 76,720.74</u>	<u>\$ 54,454.06</u>	<u>\$165,369.00</u>
<b>TOTAL ROAD EXPENDITURES.....</b>	<u>\$ 62,025.95</u>	<u>\$125,630.32</u>	<u>\$ 93,354.57</u>	<u>\$281,010.84</u>

## APPENDIX No. 2d

# Incorporated Townships Special Road Expenditures for Settlers by Territorial Districts (Part XII, The Highway Improvement Act)

For the Year Ending March 31, 1966

LOCATION AND NAME	LOCAL CONTRIBUTIONS ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>LGOMA</b>				
Aweres.....	\$ 8.11	\$ 8.11	—	\$ 16.22
Bright.....	272.77	272.76	\$ 389.20	934.73
Cobden.....	30.89	30.89	—	61.78
Fenwick.....	—	—	291.12	291.12
Fisher.....	15.07	15.07	—	30.14
Grasett.....	20.35	20.35	—	40.70
Herrick.....	4.32	4.32	—	8.64
Kehoe.....	63.75	63.75	—	127.50
Kirkwood.....	10.00	10.00	—	20.00
McMahon.....	—	—	410.47	410.47
Parkinson.....	6.68	6.68	—	13.36
Pennefather.....	—	—	291.12	291.12
Rose.....	39.56	39.56	—	79.12
Vankoughnet.....	—	—	6,009.77	6,009.77
Wells.....	71.90	71.90	1,068.58	1,212.38
Range 131.....	143.84	143.84	—	287.68
	<u>\$ 687.24</u>	<u>\$ 687.23</u>	<u>\$ 8,460.26</u>	<u>\$ 9,834.73</u>
<b>MOCHRANE</b>				
Boyce.....	—	\$ 316.01	\$ 6,523.42	\$ 6,839.43
Brower.....	\$ 479.59	479.59	—	959.18
Calder.....	282.50	282.50	—	565.00
Casgrain.....	119.30	119.30	—	238.60
Clavet.....	—	561.79	11,597.18	12,158.97
Clute.....	602.00	602.00	—	1,204.00
Colquhoun.....	37.50	37.50	—	75.00
Devitt.....	577.67	577.66	—	1,155.33
Eilber.....	884.09	884.09	—	1,768.18
Fournier.....	547.00	547.00	—	1,094.00
Fox.....	277.14	277.13	—	554.27
Hanlan.....	1,172.43	1,172.43	—	2,344.86
Idington.....	394.75	394.74	—	789.49
Kendall.....	1,344.26	1,344.25	—	2,688.51
Kendrey.....	24.00	24.00	—	48.00
Kennedy.....	150.00	150.00	—	300.00
Lamarche.....	811.42	811.42	—	1,622.84
Lowther.....	493.95	493.97	—	987.92
Matheson.....	76.88	76.86	\$ 134.52	288.26
McCrea.....	453.07	453.07	—	906.14
Moose.....	1,000.00	998.80	—	1,998.80
Munro.....	215.18	215.18	—	430.36
Newmarket.....	557.00	557.00	—	1,114.00
Owens.....	568.44	568.44	—	1,136.88
Pyne.....	116.06	116.06	—	232.12
Warden.....	215.17	215.17	—	430.34
Way.....	477.26	477.24	—	954.50
Williamson.....	1,095.30	1,095.30	—	2,190.60
	<u>\$ 12,971.96</u>	<u>\$ 13,848.50</u>	<u>\$ 18,255.12</u>	<u>\$ 45,075.58</u>
<b>KENORA</b>				
Boys.....	\$ 921.70	\$ 921.70	\$ —	\$ 1,843.40
Buller.....	192.39	192.41	—	384.80
Devonshire.....	920.01	920.02	—	1,840.03
Drayton.....	535.16	535.17	—	1,070.33
Forge.....	1,083.48	1,083.48	—	2,166.96



LOCATION AND NAME	LOCAL CONTRIBUTIONS ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>KENORA (Cont'd)</b>				
Kirkup.....	\$ 163.09	\$ 163.12	\$ —	\$ 326.21
Pellatt .....	1,408.06	1,408.05	—	2,816.11
Redditt .....	39.33	39.33	—	78.66
Slaght.....	7.42	7.42	—	14.84
Smellie.....	1,047.50	1,039.58	—	2,087.08
Southworth .....	273.75	273.75	—	547.50
Angle Road East of Willingdon .....	132.87	132.88	—	265.75
	<u>\$ 6,724.76</u>	<u>\$ 6,716.91</u>	<u>\$ —</u>	<u>\$ 13,441.67</u>
<b>MUSKOKA</b>				
Gibson.....	\$ 200.00	\$ 198.80	—	\$ 398.80
	<u>\$ 200.00</u>	<u>\$ 198.80</u>	<u>—</u>	<u>\$ 398.80</u>
<b>NIPISSING</b>				
Badgerow No. 1.....	\$ 195.25	\$ 195.25	—	\$ 390.50
Bastedo .....	70.00	70.00	—	140.00
Boulter .....	23.56	23.56	—	47.12
Dickens .....	78.00	78.00	—	156.00
Falconer.....	197.70	197.71	—	395.41
Gibbons .....	99.00	99.00	—	198.00
Grant .....	—	322.42	—	322.42
Latchford .....	1,220.57	1,220.58	—	2,441.15
Macpherson .....	292.47	292.47	—	584.94
Murchison .....	99.84	99.88	—	199.72
Pedley .....	124.50	124.50	—	249.00
Poitras .....	645.66	645.64	—	1,291.30
Sabine.....	100.00	100.00	—	200.00
Strathy .....	619.97	619.96	—	1,239.93
	<u>\$ 3,766.52</u>	<u>\$ 4,088.97</u>	<u>—</u>	<u>\$ 7,855.49</u>
<b>PARRY SOUND</b>				
Shawanaga.....	\$ 100.00	\$ 98.95	—	\$ 198.95
	<u>\$ 100.00</u>	<u>\$ 98.95</u>	<u>—</u>	<u>\$ 198.95</u>
<b>RAINY RIVER</b>				
Bennett.....	\$ 129.73	\$ 125.00	—	\$ 254.73
U.T.E. of Farrington .....	12.25	12.25	—	24.50
Fleming.....	80.32	80.32	—	160.64
Watten .....	80.00	80.00	—	160.00
	<u>\$ 302.30</u>	<u>\$ 297.57</u>	<u>—</u>	<u>\$ 599.87</u>
<b>SUDBURY</b>				
Allen.....	\$ 673.18	\$ 703.70	—	\$ 1,376.88
Awrey.....	250.47	250.46	—	500.93
Bigwood.....	224.39	228.26	—	452.65
Burwash.....	286.54	286.54	—	573.08
Cascaden.....	13.58	13.57	—	27.15
Cleland .....	278.94	277.93	—	556.87
Curtin .....	88.81	621.08	—	709.89
Davis.....	17.39	88.85	—	106.24
Dill .....	137.11	137.09	—	274.20
Dryden .....	574.54	574.54	—	1,149.08
Eden .....	1,049.63	1,049.03	—	2,098.66
Fairbank.....	153.20	153.20	—	306.40
Foleyet .....	101.74	101.74	—	203.48
Hawley .....	348.09	348.10	—	696.19
Hendrie .....	76.91	76.91	—	153.82
Henry .....	50.25	50.25	—	100.50
Janes .....	40.57	207.31	—	247.88
Loughrin .....	122.50	122.50	—	245.00
Louise .....	—	362.90	—	362.90

LOCATION AND NAME	LOCAL CONTRIBUTIONS ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
SUDBURY (Cont'd)				
Mongowin.....	\$ 67.83	\$ 600.09	\$ —	\$ 667.92
Morgan.....	96.00	96.00	135.31	327.31
Noble.....	672.34	672.33	—	1,344.67
Secord.....	606.53	606.52	—	1,213.05
Togo.....	672.36	672.34	—	1,344.70
Trill.....	288.20	288.19	—	576.39
	<u>\$ 6,891.10</u>	<u>\$ 8,589.43</u>	<u>\$ 135.31</u>	<u>\$ 15,615.84</u>
TIMISKAMING				
Barber.....	\$ 134.68	\$ 134.66	\$ —	\$ 269.34
Beauchamp.....	—	962.83	—	962.83
Bryce.....	—	—	1,393.56	1,393.56
Charters.....	420.38	420.39	—	840.77
Corkill.....	420.38	420.38	—	840.76
Firstbrook.....	66.08	66.07	—	132.15
Gillies Limit.....	15.10	13.84	—	28.94
Grenfell.....	459.06	459.05	—	918.11
Haultain.....	236.21	236.20	—	472.41
Hillary.....	—	—	93.13	93.13
Lawson.....	420.38	420.38	—	840.76
Leith.....	420.39	420.38	—	840.77
Lorrain.....	—	—	63.46	63.46
Milner.....	108.85	108.84	—	217.69
Nicol.....	403.01	403.01	—	806.02
Otto.....	93.90	93.90	—	187.80
Pense.....	40.08	40.07	—	80.15
	<u>\$ 3,238.50</u>	<u>\$ 4,200.00</u>	<u>\$ 1,550.15</u>	<u>\$ 8,988.65</u>
THUNDER BAY				
Blackwell.....	\$ 12.21	\$ 12.21	\$ —	\$ 24.42
Boucher (S.W. of).....	33.80	33.80	—	67.60
Conacher.....	70.42	70.39	—	140.81
Forbes.....	7.38	7.37	—	14.75
Golding.....	28.32	25.00	—	53.32
Ledger.....	—	—	Cr. 61.68	Cr. 61.68
Leduc.....	14.07	14.07	—	28.14
Pic.....	76.78	76.78	—	153.56
Sibley.....	5.32	5.31	—	10.63
	<u>\$ 248.30</u>	<u>\$ 244.93</u>	<u>Cr. \$ 61.88</u>	<u>\$ 431.55</u>
TOTAL ROAD EXPENDITURES BY SETTLERS.....				
	<u>\$ 35,130.68</u>	<u>\$ 38,971.29</u>	<u>\$ 28,339.16</u>	<u>\$102,441.13</u>

## APPENDIX No. 2e

**Unincorporated Townships Special Road Expenditure for Indian Reserves  
by Territorial Districts**

**(Part XII, The Highway Improvement Act)**

**For the Year Ending March 31, 1966**

LOCATION AND NAME	INDIAN RESERVES EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	TOTAL EXPENDITURE
<b>KENORA</b>			
Eagle Lake 27.....	\$ 290.77	\$ 290.76	\$ 581.53
Kenora 38B.....	195.76	97.88	293.64
Shoal Lake 39A.....	5,089.72	5,089.74	10,179.46
Wabigoon Lake 27.....	—	273.75	273.75
Whitefish Bay 32A.....	984.75	984.74	1,969.49
Whitefish Bay 34A.....	288.62	288.62	577.24
	<u>\$ 6,849.62</u>	<u>\$ 7,025.49</u>	<u>\$ 13,875.11</u>
<b>PARRY SOUND</b>			
Dokis No. 9.....	—	\$ 98.85	\$ 98.85
	<u>—</u>	<u>\$ 98.85</u>	<u>\$ 98.85</u>
<b>RAINY RIVER</b>			
Big Island Mainland 93.....	\$ 15.81	\$ 15.81	\$ 31.62
Rainy Lake 16A.....	37.28	37.28	74.56
Rainy Lake 17A.....	140.56	140.58	281.14
Rainy Lake 18B.....	48.60	48.61	97.21
Seine River 23A.....	8,209.33	8,209.34	16,418.67
	<u>\$ 8,451.58</u>	<u>\$ 8,451.62</u>	<u>\$ 16,903.20</u>
<b>SUDBURY</b>			
Mattagam 71.....	—	\$ 672.34	\$ 672.34
	<u>—</u>	<u>\$ 672.34</u>	<u>\$ 672.34</u>
<b>TOTAL ROAD EXPENDITURES FOR INDIAN RESERVES</b>	<u><u>\$ 15,301.20</u></u>	<u><u>\$ 16,248.30</u></u>	<u><u>\$ 31,549.50</u></u>

APPENDIX No. 3

Department Expenditures by Highways

April 1, 1965 to March 31, 1966

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
KING'S HIGHWAYS					
2	Quebec Border to Windsor.....	433.5	\$2,115,591.18	\$1,491,350.35	\$3,606,941.53
2A	Jct. Hwy. 401 (M.-C.F.)-Jct. Hwy. 2.....	1.3	1,345.03	14,119.18	15,464.21
3	Fort Erie-Windsor.....	244.1	1,234,111.36	755,720.47	1,989,831.83
3A	Jct. Hwy. 58 (Welland)-Jct. Hwy. 57.....	9.5	—	43,167.14	43,167.14
3B	Hwy 3-Windsor.....	4.3	64,736.75	15,417.54	80,154.29
3C	Hwy. 3 (Fort Erie)-Ridgeway.....	7.1	3,633.35	34,790.23	38,423.58
4	Port Stanley-Hwy. 10 (Flesherton).....	131.6	1,361,384.86	374,875.84	1,736,260.70
5	Hwy. 27 (Toronto)-Hwy. 2 (Paris).....	54.6	286,985.10	279,457.93	566,443.03
6	Port Dover-Tobermory.....	200.8	1,152,906.03	573,152.28	1,726,058.31
7	Ottawa-Hwy. 40C (Sarnia).....	451.2	2,226,275.56	1,797,737.43	4,024,012.99
7A	Hwy. 115-Hwy. 7 & 12 (Manchester).....	30.7	97,624.73	76,372.75	173,997.48
8	Niagara Falls-Goderich [7].....	101.2	4,403,595.56	377,212.92	4,780,808.48
8A	Queenston Bridge-Hwy. 8 (St. Davids).....	2.7	104.37	6,587.81	6,692.18
9	Hwy. 27 (Schomberg)-Hwy. 21 (Kincardine).....	103.5	728,489.01	283,157.04	1,011,646.05
10	Port Credit-Owen Sound.....	89.3	2,900,698.55	327,813.70	3,228,512.25
11	Toronto-Hwy. 600 (Rainy River).....	1,184.4	5,233,152.31	2,789,970.84	8,023,123.15
11A	Port Arthur-Hwy. 11 & 17 (Sistonens Corners).....	20.5	22,395.30	61,134.96	83,530.26
12	Whitby Hwy. 401 (M.-C.F.)-Hwy. 27 (Midland) [7].....	78.4	933,241.73	351,717.87	1,284,959.60
14	Hwy 33 (Bloomfield)-Hwy. 7 (Marmora).....	41.1	53,971.45	105,118.29	159,089.74
15	Hwy 2 (Barriefield)-Ottawa [7].....	71.9	62,840.82	466,671.10	529,511.92
16	Hwy. 2 (Johnstown)-Ottawa.....	50.0	141,315.54	128,881.70	270,197.24
17	Quebec Border-Manitoba Border [11].....	1,297.6	7,903,289.86	3,040,334.55	10,943,624.41
18	Leamington-Windsor.....	39.7	1,722,594.92	46,570.49	1,769,165.41
18A	Hwy. 18 (Kingsville)-Hwy. 18 (Malden Centre).....	19.4	4,638.24	20,360.39	24,998.63
19	Port Burwell-Hwy. 86 (Tralee).....	69.9	41,491.07	165,439.79	206,930.86
20	Q.E.W.-Hamilton South Limits.....	40.5	190,806.22	234,065.57	424,871.79
21	Hwy 3 (Morpeth)-Owen Sound.....	177.2	702,084.11	394,792.43	1,096,876.54
22	Hwy. 4 (London)-Hwy. 7.....	27.5	6,762.30	62,471.11	69,233.41
23	Hwy. 7-Hwy. 9 (Teviotdale).....	55.9	226,596.59	154,634.40	381,230.99
24	Port Dover-Collingwood.....	101.2	485,511.11	313,905.02	799,416.13
24A	Paris-Galt.....	18.7	583,154.24	37,927.01	621,081.25
25	Hwy. 2 (Burlington)-Ospringle.....	25.6	170,206.57	115,826.73	286,033.30
26	Barrie-Owen Sound.....	64.4	67,259.93	299,349.86	366,609.79
27	Q.E.W.-Penetang.....	88.3	500,326.21	488,930.90	989,257.11
28	Hwy. 2 (Port Hope)-Hwy. 62 (Bancroft).....	84.2	49,370.29	233,838.33	283,208.62
29	Hwy. 2 (Brockville)-Hwy. 17 (Arnprior) [15].....	52.3	39,282.84	105,082.53	144,365.37
30	Hwy. 2 (Brighton)-Hwy. 7 (Havelock).....	29.5	21,525.20	91,749.64	113,274.84
31	Hwy. 2 (Morrisburg)-Ottawa.....	41.0	366,201.99	147,135.82	513,337.81
32	Hwy. 2 (Gananoque)-Hwy. 15.....	11.3	726.32	40,740.23	41,466.55
33	Kingston-Hwy. 14 (Stirling).....	77.9	113,112.57	213,155.68	326,268.25
34	Hwy. 2 (Lancaster)-Hwy. 17 (Hawkesbury).....	34.1	2,382.97	91,838.18	94,221.15
35	Hwy. 401 (M.-C.F.)-Hwy. 11B (North of Huntsville).....	136.9	1,194,600.92	421,333.86	1,615,934.78
35A	Hwy. 121-Hwy. 35.....	2.0	1,073.40	3,117.06	4,190.46
36	Hwy. 7-Hwy. 28 (Burleigh Falls).....	44.7	327,380.41	147,078.61	474,459.02
37	Hwy. 401 (M.-C.F.) (Belleville)-Hwy. 7 (Actinolite).....	26.1	276,028.22	74,452.22	350,480.44
38	Hwy. 2-Hwy. 7 (Sharbot Lake).....	44.1	309,467.40	117,768.69	427,236.09
39	Hwy. 2-Windsor.....	16.0	648,896.56	27,718.38	676,614.94



Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
40	Chatham-Sarnia.....	\$ 45.5	\$ 498,528.74	\$ 71,682.86	\$ 570,211.60
40A	Hwy. 40 (Corunna)-Hwy. 402.....	—	1,164,330.94	7,964.87	1,172,295.81
40C	Vidal St.-Errol Rd.-(Sarnia).....	.5	—	140.93	140.93
41	Hwy. 401-Pembroke.....	132.6	831,450.09	273,821.84	1,105,271.93
42	Hwy. 29 (Forthton)-Westport [29].....	31.3	33,747.21	86,351.00	120,098.21
43	Hwy. 34 (Alexandria)-Hwy. 7 (Perth).....	89.1	740,749.65	228,654.94	969,404.59
44	Hwy. 17 (Carp)-Hwy. 29 (Almonte).....	8.6	416,372.96	133,410.71	549,783.67
45	Hwy. 2 (Cobourg)-Hwy. 7 (Norwood).....	32.2	6,584.61	86,832.20	93,416.81
46	Hwy. 7-Hwy. 35 (Coboconk).....	38.7	393,711.01	72,091.36	465,802.37
47	Hwy. 48 (Ringwood)-Hwys. 7 & 12.....	17.8	8,783.07	111,622.55	120,405.62
48	Steeles Ave. (Toronto)-Hwy. 46 (Bolsover) [12].....	53.1	306,819.37	239,607.37	546,426.74
49	Jct. Hwy. 33-Jct. Hwy. 401 [2].....	11.3	2,292,089.13	23,201.82	2,315,290.95
50	Metro Toronto North Limits- Hwy 9.....	19.8	717,257.86	70,025.85	787,283.71
52	Hwy. 2 (Alberton)Wentworth Wellington County Line.....	15.4	185,935.88	58,248.61	244,184.49
53	Hwy. 20-Hwy. 2 (Eastwood).....	27.3	45,843.11	90,175.38	136,018.49
54	Hwy. 3 (Cayuga)-Hwy. 2 (Cainsville).....	25.3	9,180.46	95,982.91	105,163.37
56	Hwy. 3-Hwy. 53 (Elfrida).....	14.6	4,184.03	168,994.19	173,178.22
57	Hwy. 3A-Hwy. 20 (Bismark).....	8.9	395.31	21,814.61	22,209.92
58	Hwy. 3-Hwy. 8 (St. Catharines).....	14.8	4,882,575.54	62,466.29	4,945,041.83
59	Long Point Park-Shakespeare.....	65.6	159,761.82	179,897.29	339,659.11
60	Hwy. 17-Hwy. 35 (Huntsville) [35].....	133.9	1,506,715.65	260,331.97	1,767,047.62
61	Pigeon River (U.S.A.-Bdry)- Fort William.....	33.8	2,490.12	44,061.26	46,551.38
62	Hwy. 7 (Madoc)-Quebec Border [60].....	113.3	662,788.22	265,420.63	928,208.85
63	North Bay-Timiskaming.....	39.4	166,426.80	100,276.65	266,703.45
64	Hwy. 69-Hwy. 11 (Marten River).....	82.7	1,749,239.64	164,059.06	1,913,298.70
65	Quebec Border-Matachewan.....	79.9	549,266.52	153,823.48	703,090.00
66	Quebec Border-Hwy. 65.....	60.9	52,992.52	99,096.58	152,089.10
67	Sec. Hwy. 578 (Iroquois Falls)- Hwy. 101.....	20.4	32,967.37	42,635.45	75,602.82
68	South Baymouth-Hwy. 17 (Espanola).....	82.2	959,319.82	262,620.58	1,221,940.40
69	Hwy. 12-Sec. Hwy. 545 (Capreol) [11].....	200.7	992,018.98	532,739.47	1,524,758.45
70	Hwys. 6 & 21-Hepworth.....	9.2	23,950.25	19,999.78	43,950.03
71	Fort Frances-Hwy. 17 (Longbow Corners) [11].....	99.7	355,229.83	123,589.08	478,818.91
72	Hwy. 17 (Dinorwic)-Sioux Lookout ..	43.5	826,320.15	62,918.77	889,238.92
73	Port Bruce-Dorchester.....	23.6	8,569.28	45,224.38	53,793.66
74	Hwy. 3 (New Sarum)-Nilestown.....	13.9	320,722.92	30,846.18	351,569.10
76	Hwy. 3 (Eagle)-Hwy. 2.....	11.3	4,848.09	17,852.35	22,700.44
77	Leamington-Hwy. 401 (M.-C.F.) (Comber).....	14.0	121,468.28	39,420.89	160,889.17
78	Hwy. 21 (Dresden)-Wallaceburg .....	9.5	326.46	10,668.08	10,994.54
79	Hwy. 2-Hwy. 7.....	27.6	57,152.39	38,811.08	95,963.47
80	Hwy 2 (Strathburn)-Hwy. 40 (Courtright).....	43.1	229,275.93	56,471.21	285,747.14
81	Hwy. 2 (Delaware)-Hwy. 21 (Grand Bend).....	38.4	586,070.71	128,920.51	714,991.22
82	Hwy. 7-Hwy. 21 (Hanks Corners).....	5.5	—	17,245.95	17,245.95
83	Hwy. 23 (Russeldale)-Hwy. 21 (Brewster).....	24.1	19,527.37	48,808.04	68,335.41
84	Hwy. 4 (Hensall)-Hwy. 21 (St. Joseph).....	10.7	387.87	24,810.56	25,198.43
85	Hwy. 8 (Kitchener)-Hwy. 86 (Elmira).....	7.3	35,857.46	18,470.73	54,328.19

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
86	Hwy. 7–Hwy. 21 (Amberley).....	\$ 78.4	\$ 405,517.72	\$ 229,842.45	\$ 635,360.17
87	Hwy. 9–Hwy. 86 (Bluevale).....	19.7	13,319.63	52,428.14	65,747.77
88	Hwy. 11–Hwy. 27 (Bondhead).....	5.0	2,617.72	21,680.68	24,298.40
89	Hwy. 400–Hwy. 23 (Wellington/Perth County Line).....	63.7	29,410.63	190,900.25	220,310.88
90	Barrie–Angus.....	10.3	733,523.58	37,469.23	770,992.81
91	Hwy. 26–Hwy. 24 (Duntroon).....	5.0	173,689.11	20,046.16	193,735.27
92	Hwy. 27 (Elmvale)–Wasaga Beach.....	7.9	1,361.88	25,435.88	26,797.76
93	Hwy. 11 (Barrie)–Hwy. 27 (Waverly).....	17.5	10,619.16	57,190.45	67,809.61
94	Hwy. 11 (Calander)–Hwy. 17.....	5.5	8,710.04	16,818.90	25,528.94
95	Hornes Point–Hwy. 96 (Wolfe Island).....	7.1	94.11	14,909.28	15,003.39
96	Quebec Head–West End of Wolfe Island.....	20.4	1,249.24	70,423.76	71,673.00
97	Hwy. 6 (Freelton)–Hwy. 19.....	39.3	302,268.36	118,012.94	420,281.30
98	Hwy. 3 (Blenheim)–Hwy. 2 (Windsor)	55.1	186,806.46	115,343.95	302,150.41
99	Hwy. 8 (Dundas)–Hwy. 24.....	15.9	501,005.03	50,753.52	551,758.55
101	Quebec Border–Hwy. 17 (Wawa).....	263.2	3,265,693.62	346,069.54	3,611,763.16
102	Hwy. 2 (Hamilton)–Hwy. 8 (Dundas)	—	6.50	—	6.50
103	Hwy. 400–Hwy. 69 (Footes Bay) [12].....	29.9	36,939.98	160,657.44	197,597.42
104	Hwy. 9–Grand Valley.....	1.8	13.95	4,774.75	4,788.70
105	Hwy. 17 (Vermilion Bay)–Red Lake.....	108.9	2,399,557.64	100,383.14	2,499,940.78
106	Hwy. 28 (Dale)–Hwy. 2 (Welcome).....	2.6	—	7,163.20	7,163.20
107	Hwy. 18–Hwy. 3 (Ruthven).....	1.0	—	1,185.39	1,185.39
108	Hwy. 17–Sec. Hwy. 639 (Quirke Lake)	26.0	4,066.10	76,113.95	80,180.05
112	Hwy. 11–Hwy. 66.....	12.4	6,399.03	30,938.51	37,337.54
114	Hwy. 3 (Maidstone)–Hwy. 98.....	1.2	—	1,123.65	1,123.65
115	Hwy. 401 (M.–C.F.)–Peterborough).....	17.1	37,912.09	75,335.66	113,247.75
116	Hwy. 72 (Patricia Corners)–Hudson Post Office.....	9.9	8,235.64	21,402.54	29,638.18
117	Steeles Ave.–Hwy. 7 (Bathurst Street)	1.3	685.28	1,497.32	2,182.60
118	Hwy. 35–Hwy. 69 (Glen Orchard).....	48.4	260,682.72	100,286.55	360,969.27
119	Hwy. 17 (Dryden)–Richan.....	13.9	124.45	16,602.26	16,726.71
120	Hwy. 400–Jct. Hwys. 11 and 93 (Old 400).....	0.7	—	59.85	59.85
121	Hwy. 28–Hwy. 35 (Fenelon Falls).....	81.8	236,945.36	155,671.85	392,617.21
122	Q.E.W. (N. of Clarkson)–Q.E.W. (Oakville).....	5.1	83,466.28	42,480.46	125,946.74
123	Hwy. 11–North Bay Airport.....	3.8	6,803.29	11,043.82	17,847.11
124	Hwy. 69 (Parry Sound)–Hwy. 11 (Sundridge).....	49.1	300,571.16	128,681.29	429,252.45
125	Hwy. 105–(Cochenour Mine).....	7.7	6,559.23	7,464.41	14,023.64
126	Hwy. 401 (M.–C.F.)–Hwy. 2 (London)	3.2	96,985.93	18,280.69	115,266.62
127	Hwy. 62 (Maynooth)–Hwy. 60.....	33.2	49,761.05	50,429.15	100,190.20
128	Kenora–Redditt.....	17.7	5,848.98	35,378.62	41,227.60
129	Hwy. 17–Chapleau.....	139.6	913,821.29	271,196.80	1,185,018.09
130	Port Arthur–Hwy. 61.....	17.8	14,695.17	37,704.16	52,399.33
132	Hwy. 41–Renfrew.....	17.6	9.34	36,129.50	36,138.84
133	Hwy. 33 (Millhaven)–Hwy. 401 (M.–C.F.).....	6.6	924,535.00	10,200.40	934,735.40
135	Hwy. 401 (M.–C.F.) (London)–Hwy. 2	3.8	65.09	7,569.40	7,634.49
136	Hwy. 24–Orangeville.....	7.8	379,865.24	24,919.88	404,785.12
137	Hwy. 401 (M.–C.F.)–Thousand Island Bridge.....	1.1	1,414.11	5,304.16	6,718.27
144	Sudbury–Geneva Lake Mine.....	59.7	1,913,090.59	132,390.81	2,045,481.40
400	Hwy. 401 (M.–C.F.)–Hwy. 12 (Coldwater).....	73.7	1,958,834.97	561,493.32	2,520,328.29
401	(M.–C.F.) Quebec Border–Hwy. 3B (Windsor).....	516.4	38,073,040.12	3,389,785.57	41,462,825.69
402	Hwy. 7–Bluewater Bridge.....	3.7	46,312.14	33,024.62	79,336.76

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
403	Q.E.W.—Hamilton.....	9.6	\$ 3,059,344.32	\$ 83,851.89	\$ 3,143,196.21
404	Extension of Don Valley Parkway.....	—	15,734.62	—	15,734.62
405	Q.E.W.—International Bridge (Queenston).....	5.5	82,433.09	33,709.16	116,142.25
406	Welland—St. Catharines.....	3.2	1,423,816.87	4,941.85	1,428,758.72
407	Hwy. 115—Hwy. 27 (Proposed).....	—	412,234.08	—	412,234.08
417	Ottawa Easterly—Quebec Border.....	—	1,743.36	—	1,743.36
QEW	Fort Erie—Toronto.....	95.1	4,555,657.71	1,478,136.97	6,033,794.68
TOTAL EXPENDITURE ALLOCATED TO KING'S HIGHWAYS.....			\$123,895,500.53	\$30,660,793.27	\$154,556,293.80
SECONDARY HIGHWAYS					
500	Hwy. 62—Hwy. 41 (Denbigh).....	38.2	\$ 161,167.75	\$ 142,465.12	\$ 303,632.87
501	Hwy. 103—Honey Harbour.....	9.2	12,509.72	33,925.36	46,435.08
502	Hwy. 2 (Napanee)—Hwy. 2 (Marysville).....	8.7	2,699.08	21,117.60	23,816.68
503	Hwy. 46 (Kirkfield)—Hwy. 121 (Tory Hill).....	76.4	214,275.03	168,783.46	383,058.49
504	Sec. Hwy. 620 (Glen Alda)—Hwy. 28 (Apsley).....	16.3	65,984.56	22,678.63	88,663.19
505	Hwy. 46—Sec. Hwy. 503.....	12.7	2,827.34	26,880.75	29,708.09
506	Hwy. 41—Plevna.....	20.9	131,798.44	51,240.17	183,038.61
507	Hwy. 28 (Lakefield)—Gooderham.....	39.6	24,319.66	117,187.77	141,507.43
508	Burnstown—Black Donald Mine.....	24.0	949,368.76	60,135.84	1,009,504.60
509	Hwy. 7—Snow Road.....	13.1	97,453.18	39,717.07	137,170.25
510	Sec. Hwy. 520—Hwy. 124.....	1.9	—	2,803.76	2,803.76
511	Brightside—Sec. Hwy. 508 (Calabogie).....	20.5	89.11	75,528.66	75,617.77
512	Hwy. 41 (Eganville)—Hwy. 60.....	29.4	65,984.23	47,885.35	113,869.58
513	Hwy. 132 (Dacre)—C.N.R. Crossing E. of Caldwell.....	10.2	16,221.09	21,079.55	37,300.64
514	Hwys. 35 & 60—Interlaken.....	10.0	4,387.79	27,368.48	31,756.27
515	Jct. Sec. Hwy. 512—Hwy. 62 (Combermere).....	28.0	46,176.11	61,293.07	107,469.18
516	Port Sidney—Windermere.....	16.0	17,147.90	36,295.70	53,443.60
517	Hwy. 62—New Carlow.....	10.4	662.51	25,525.12	26,187.63
518	Sand Lake—Hwy. 69.....	54.2	182,735.69	173,398.80	356,134.49
519	Hwy. 121—Red Stone Lake.....	34.0	44,702.92	61,118.05	105,820.97
520	Hwy. 11—Ardbeg.....	32.0	157,194.27	77,422.34	234,616.61
521	Hwy. 62 (S. of Round Lake)— N. of Round Lake.....	13.2	10,427.35	16,259.80	26,687.15
522	Hwy. 11 (Trout Creek)—West of Loring.....	43.0	404,263.58	92,682.53	496,946.11
523	Hwy. 60 (Madawaska)—Hastings County North Limits.....	13.5	25,667.40	25,813.85	51,481.25
524	Sec. Hwy. 522—Sec. Hwy. 534.....	3.1	—	7,796.74	7,796.74
525	Gravenhurst—Muskoka Lake Sanitarium.....	1.5	—	2,159.09	2,159.09
526	Hwy. 69—Britt.....	2.3	84.98	10,800.34	10,885.32
527	Hwy. 118 (Baysville)—Hwy. 11B (Huntsville).....	14.5	301.29	31,216.18	31,517.47
528	Hwy. 64—Wolseley Bay.....	8.3	92.42	28,618.12	28,710.54
528A	Sec. Hwy. 528—Pine Cove Landing.....	3.3	718.08	7,094.76	7,812.84
529	Hwy. 69—Hwy. 69 (Magnetawan).....	15.9	2,032.32	42,613.26	44,645.58
529A	Sec. Hwy. 529—Bayfield Wharf Road..	3.0	5,385.57	7,830.18	13,215.75
530	Sec. Hwy. 519—Hwy. 35.....	12.5	62,527.39	31,140.51	93,667.90
531	Hwy. 17—Bonfield.....	2.3	232,412.25	5,611.74	238,023.99
532	Hwy. 11—Hwy. 69.....	40.2	229,471.34	80,164.45	309,635.79
533	Hwy. 17 (Mattawa)—Hwy. 63.....	31.6	289,341.46	58,643.65	347,985.11
534	Hwy. 11B (Powassan)—Restoule.....	21.9	35,451.50	56,261.51	91,713.01
535	Hwy. 64 (Noelville)—Riviere Veuve.....	29.9	136,850.99	62,011.35	198,862.34
536	Hwy. 17—Creighton Mine.....	3.8	148.46	9,424.90	9,573.36

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
537	Hwy. 69-Hwy. 17 (Wanapitei).....	12.2	\$ 95,666.78	\$ 45,026.58	\$140,693.36
538	Hwy. 17 East and West of Algoma.....	4.1	13,727.20	8,169.57	21,896.77
539	Hwy. 17 (Warren)-Hwy. 64 (Field).....	24.8	4,687.23	77,879.45	82,566.68
539A	Sec. Hwy. 539-River Valley.....	0.8	1,166.94	1,474.66	2,641.60
540	Hwy. 68 (Little Current)-Meldrum Bay.....	85.1	256,384.20	204,366.12	460,750.32
540A	Sec. Hwy. 540-Barrie Island.....	2.5	—	6,036.23	6,036.23
541	Hwy. 17 (Sudbury)-Skead.....	15.7	266,688.49	56,865.67	323,554.16
541A	Sec. Hwy. 541-Falconbridge.....	1.9	17.84	5,025.10	5,042.94
542	Hwy. 68-Sec. Hwy. 540 (Gore Bay).....	43.0	101,676.37	122,591.54	224,267.91
542A	Sec. Hwy. 542-Tehkumah.....	1.4	—	2,788.96	2,788.96
543	Hwy. 69 (Sudbury)-Long Lake.....	5.1	7,671.48	14,286.89	21,958.37
544A	Hwy. 144-Levack.....	1.3	—	2,368.41	2,368.41
545	Sec. Hwy. 541-Milnet.....	17.0	5,817.73	43,340.44	49,158.17
546	Hwy. 17 (Iron Bridge)-Mount Lake.....	47.8	40,813.77	89,904.66	130,718.43
547	Hwy. 101 (Wawa)-Hawk Jct.....	3.4	76,899.53	3,909.29	80,808.82
548	Hwy. 17-Hilton Beach Turn-off.....	45.6	37,108.88	78,045.18	115,154.06
549	Lake Panache-Hwy. 17.....	9.1	98,841.71	40,328.44	139,170.15
550	Hwy. 17 (Sault Ste. Marie)-Gros Cap.....	13.6	110,256.89	20,901.17	131,158.06
551	Sec. Hwy. 540-Providence Bay.....	12.2	10,127.17	39,376.84	49,504.01
552	Island Lake-Goulais Bay.....	13.9	2,057.43	31,039.74	33,097.17
553	Hwy. 17 (Massey)-Richie Falls Camp.....	50.2	10,972.23	56,787.30	67,759.53
554	Hwy. 129-Sec. Hwy. 546.....	10.9	3,887.67	23,536.61	27,424.28
555	Sec. Hwy. 557-Granary Lake Landing.....	7.0	1,877.08	18,772.16	20,649.24
556	Hwy. 17 (Heyden)-Christiana Mine Road.....	26.3	42,261.55	82,491.70	124,753.25
557	Hwy. 17 (Blind River)-Matinenda Lake.....	13.5	4,073.72	32,619.78	36,693.50
558	Hwy. 11 (Haileybury)-Montreal River.....	16.9	36,129.50	32,098.22	68,227.72
559	North of Nobel-North of Shawanaga.....	13.5	898.03	25,845.74	26,743.77
560	Hwy. 11 (Englehart)-Gogama.....	143.4	100,280.71	255,697.13	355,977.84
560A	Sec. Hwy. 560-Westree.....	6.2	—	4,385.50	4,385.50
561	Hwy. 17 (Bruce Mines)-Sec. Hwy. 638.....	12.8	9,290.30	73,498.05	82,788.35
562	Hwy. 11-Hwy. 65.....	9.0	—	13,863.50	13,863.50
563	Hwy. 17-Batchawana Bay.....	3.4	142.41	11,022.70	11,165.11
564	Hwy. 112 (Tarzwell)-Blanche River.....	9.8	20.88	12,574.83	12,595.71
565	Sec. Hwy. 550-Pte Aux Pins.....	3.5	1,924.62	2,570.42	4,495.04
566	Hwy. 65 (Matachewan)-Ashley Mines.....	15.6	17,314.64	23,115.53	40,430.17
567	Hwy. 11 (North Cobalt)-Silver Centre.....	21.7	41,335.56	40,665.54	82,001.10
568	Hwy. 11-Kenogami.....	1.0	2,086.50	2,115.31	4,201.81
569	Hwy. 11-Jct. Hwys. 11 & 624.....	17.5	39,260.00	46,170.48	85,430.48
570	Hwy. 11-Sesekinika.....	1.9	3,015.86	2,559.70	5,575.56
571	Sec. Hwy. 562-Hwy. 11 (Earlton).....	3.7	—	5,800.73	5,800.73
572	Hwy. 11 (Ramore)-Jct. Hwy. 101.....	10.3	20.60	28,924.85	28,945.45
573	Hwy. 11-Sec. Hwy. 560 (Charlton).....	12.5	54.77	25,156.19	25,210.96
574	Norembege-Sec. Hwy. 579.....	18.0	161,834.18	84,136.96	245,971.14
575	Hwy. 101 (Night Hawk Centre) Southerly.....	3.0	8,463.92	1,597.50	10,061.42
576	Hwy. 101-Kam-Kotia Mine.....	14.8	545,915.24	47,423.19	593,338.43
577	Hwy. 101 (Shillington)-Hwy. 67 (Ansonville).....	15.8	55,648.84	39,853.12	95,501.96
578	Hwy. 11 (Nellie Lake)-Hwy. 67 (Iroquois Falls).....	5.1	250,184.74	12,145.27	262,330.01
579	Hwy. 11 (Cochrane)-Gardiner.....	21.8	52,522.81	55,921.74	108,444.55
580	Hwy. 11-D.H.O. Park (Lake Nipigon).....	7.7	159.08	5,188.62	5,347.70
581	Hwy. 11 (Moonbeam)-Remi Lake.....	3.1	4,129.74	10,571.07	14,700.81
582	Hwys. 11 & 17-Hurkett-Hwys. 11 & 17.....	4.0	—	4,105.38	4,105.38
583	Mead-Lac Ste. Therese.....	30.1	150,771.55	82,750.72	233,522.27
584	Hard Rock Mine-Nakina.....	42.5	879.08	62,047.14	62,926.22
584A	Hwy. 11-Sec. Hwy. 584.....	2.4	—	1,303.34	1,303.34



Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
585	Hwys. 11 & 17-Pine Portage.....	22.9	\$ 8,265.83	\$ 31,509.27	\$ 39,775.10
586	Hwy. 11-Lower Shebandown Lake.....	3.3	980.97	3,286.24	4,267.21
587	Hwys. 11 & 17-Silver Islet.....	26.0	14,324.27	55,204.71	69,528.98
588	Hwys. 11 & 17-Round Lake Road.....	34.8	26,987.86	70,769.47	97,757.33
589	Hwys. 11A & 17A-Dog Lake Road.....	18.7	16,586.62	46,479.60	63,066.22
590	Hwy. 130-Sec. Hwy. 588.....	25.1	46,456.35	55,341.20	101,797.55
591	Sec. Hwy. 589-Northerly.....	4.9	16,602.40	6,938.22	23,540.62
592	Hwy. 11 (Novar)-Hwy. 11 (N. of Sec. Hwy. 518).....	10.2	1,398.29	18,393.30	19,791.59
593	Sec. Hwy. 588-Silver Mountain.....	29.9	34,920.36	26,679.23	61,599.59
594	Dryden-Hwy. 17.....	20.6	34,550.41	19,427.51	53,977.92
595	Sec. Hwy. 590-Sec. Hwy. 597.....	25.3	375.74	61,053.84	61,429.58
596	Hwy. 17 (Keewatin)-Minaki.....	29.6	437.88	72,371.83	72,809.71
597	Sec. Hwy. 595-Sec. Hwy. 608.....	9.5	163.88	22,006.55	22,170.43
598	Sec. Hwy. 604-Hwy. 128.....	2.7	516.75	6,740.68	7,257.43
599	Ignace-Badesdawa Lake.....	185.2	367,280.05	140,141.47	507,421.52
600	Hwy. 71-Hwy. 11 (Rainy River).....	60.8	32,542.48	84,936.21	117,478.69
601	Hwy. 17 (Through Dryden)-Hwy. 17..	15.5	80,663.37	22,573.04	103,236.41
602	Hwys. 11 & 71 (Fort Frances)-Hwys. 11 & 71 (Emo).....	29.1	140,840.48	38,129.50	178,969.98
603	Hwy. 17-Dymont.....	2.8	—	8,288.73	8,288.73
604	Hwy. 17 (Kenora)-Kenora Airport....	5.5	2,804.94	6,946.33	9,751.27
605	Hwy. 17-Rugby Lake.....	7.7	73,440.23	7,239.98	80,680.21
606	Hwy. 17-Markstay.....	1.0	88,462.07	2,877.76	91,339.83
607	Hwy. 64-French River.....	6.3	138,814.85	29,950.57	168,765.42
607A	Sec. Hwy. 607-Hwy. 69.....	1.5	75.62	2,576.30	2,651.92
608	Hwy. 61 (Moose Hill)-Sec. Hwy. 595..	11.9	103.18	21,812.06	21,915.24
609	Hwy. 105-Clay Lake Landing.....	10.1	6,195.71	10,166.33	16,362.04
610	Hwy. 607-Hwy. 101.....	11.6	120,146.38	19,017.06	139,163.44
611	Sec. Hwy. 602-Burrlis/Miscampbell Twp. Line.....	12.5	322.54	14,984.88	15,307.42
612	Hwy. 103-Hwy. 69 (Gordon Bay).....	7.0	376.95	13,126.36	13,503.31
613	Sec. Hwy. 602-Lake Despair Landing.....	25.5	47,900.50	37,569.75	85,470.25
614	Hwy. 17-Manitouawadge.....	36.4	165,766.60	78,549.41	244,316.01
615	Hwy. 71-Clearwater Dock.....	13.6	1,095.71	17,095.64	18,191.35
616	Hwy. 101-Polomar (C.N.R.).....	2.0	5,044.82	1,195.43	6,240.25
617	Hwy. 11 (Stratton)-Sec. Hwy. 600.....	14.4	193.65	21,995.96	22,189.61
618	Hwy. 105-Madsen Mine.....	8.8	32.46	8,929.00	8,961.46
619	Hwy. 11 (Pinewood)-Sec. Hwy. 621....	25.3	—	27,211.50	27,211.50
620	Hwy. 62-Hwy. 28.....	25.4	231,317.88	56,047.90	287,365.78
620A	Sec. Hwy. 620 (Apsley)-Hwy. 28.....	0.3	—	263.94	263.94
621	Hwy. 11 (Sleeman)-Lake Of The Woods Dock.....	32.8	12,583.64	64,337.77	76,921.44
622	Hwy. 11 (Atikoken) Northerly.....	6.8	—	10,581.76	10,581.76
623	Hwy. 11-Sapawe.....	3.3	14,168.08	8,297.99	22,466.07
624	Hwy. 11 and Sec. Hwy. 569-Larder Lake.....	27.0	142,327.10	51,041.32	193,368.42
625	Caramat-Hwy. 11.....	20.0	21,647.62	49,928.14	71,575.76
626	Hwy. 101 (Matheson)-Hwy. 67 (Porquois Jct.).....	19.8	80.61	16,580.18	16,660.79
627	Hwy. 17-Heron Bay.....	5.2	—	8,156.53	8,156.53
628	Hwys. 11 & 17-Red Rock.....	4.4	321,916.54	7,375.04	329,291.58
629	Hwy. 101-Timmins Airport.....	6.7	—	14,339.26	14,339.26
630	Hwy. 17 to Kiosk.....	18.5	123,628.73	45,479.77	169,108.50
631	Hornepayne-Hwy. 11.....	46.6	603,532.98	80,954.73	684,487.71
632	Sec. Hwy. 532 (Rosseau)-Hwy. 118 (Port Carling).....	16.0	45,823.98	33,915.80	79,739.78
633	Hwy. 11-Kawene.....	3.7	—	3,627.21	3,627.21
634	Hwy. 69 (Val Caron)-Hwy. 144....	11.8	67,648.34	27,494.46	95,142.80
635	Hwy. 17-Ottawa River.....	1.6	2,197.47	4,747.59	6,945.06
636	Hwy. 11-Frederickhouse Station.....	3.0	4,382.09	11,872.77	16,254.86
637	Killarney-Hwy. 69.....	41.8	66,640.69	127,724.14	194,364.83
638	Hwy. 17 (Echo Bay)-Dunns Valley.....	23.9	7,266.80	73,102.76	80,369.56

HWY. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
639	Hwy. 108—Sec. Hwy. 546.....	—	\$ 59,335.46	\$ 16,685.10	\$ 76,020.56
640	Jct. Hwy. 11 (Earlton)—Earlton Airport.....	1.7	3,005.94	3,155.85	6,161.79
641	Hwy. 17—Pellatt.....	8.4	81.94	37,097.86	37,179.80
642	Sioux Lookout—Alcona.....	11.3	11,536.95	12,197.03	23,733.98
643	Nakina—Cavell.....	12.1	158.96	7,949.25	8,108.21
644	Hwy. 69 (Pointe Au Baril)—Bay.....	0.6	246.33	2,534.34	2,780.67
645	Sec. Hwy. 529 to Bing Inlet.....	2.5	22,945.36	6,476.40	29,421.76
646	Central Patricia—Pickle Lake.....	4.5	—	5,744.24	5,744.24
647	Vermilion Bay—Blue Lake Provincial Park.....	5.5	6,136.74	6,591.94	12,728.68
648	Hwy. 121 (E. of Tory Hill)—Hwy. 121..	23.5	8,887.12	33,720.29	42,607.41
649	Hwy. 36 (Bobcaygeon)—Union Creek..	10.9	2,633.90	34,246.37	36,880.27
650	Adams Mine—Hwy. 112 (Dane).....	—	225,034.48	8,809.94	233,844.42
651	Hwy. 101—Renabie.....	—	52,127.43	844.93	52,972.36
652	Jct. Sec. Hwy. 574 Easterly.....	—	262,702.80	3,586.12	266,288.92
654	Calander—Nipissing.....	14.0	49,574.83	38,319.42	87,894.25
655	Hwy. 101 (Timmins) Northerly.....	4.4	390,776.25	8,590.43	399,366.68
656	Sec. Hwy. 533 (N. of Mattawa) Northerly.....	2.6	3,891.78	3,292.63	7,184.41
657	Hwy. 96—Dawson Point Dock (Wolfe Island).....	2.5	32,725.26	5,249.80	37,975.06
659	Kenora East Limits—Hwy. 128.....	12.3	3,000.76	9,402.60	12,403.36
660	Hwy. 69 (Bala)—Hwy. 103.....	11.4	55,250.25	24,114.09	79,364.34
TOTAL EXPENDITURE ALLOCATED TO SECONDARY HIGHWAYS.....			\$10,637,732.26	\$6,067,027.18	\$16,704,759.44
TERTIARY ROADS					
800	Hwys. 11 & 17 (Port Arthur N. Limits) —North of Whistle Lake.....	63.5	—	23,934.39	23,934.39
801	Hwy. 11 (Nezah)—Sturgeon River Mine.....	8.8	8,049.26	7,544.76	15,594.02
802	Hwy. 11 (Kashabowie)—Burchell Lake	8.5	2,300.80	12,615.21	14,916.01
804	Hwy. 105 Westerly—Manitou Falls Road.....	12.8	—	3,760.55	3,760.55
805	River Valley—Emerald Lake.....	35.0	1,751.25	24,240.58	25,991.83
806	Sec. Hwy. 545 (S. of Minlet) Northerly —Bigwood Lake.....	4.2	2,029.62	1,788.11	3,817.73
807	Hwy. 11 (Smooth Rock Falls)— Fraserdale (Pinard).....	—	106,490.10	15,454.96	121,945.06
TOTAL EXPENDITURE ALLOCATED TO TERTIARY ROADS.....			\$ 120,621.03	\$ 89,338.56	\$ 209,959.59
ACCESS AND INDUSTRIAL ROADS					
	Algoma—Nordic Mines Road.....	—	—	4,193.36	4,193.36
	Caramat—Manitouwadge.....	—	—	46,234.71	46,234.71
	Denison Mine Road.....	—	—	4,331.70	4,331.70
	Ignace—Valora.....	—	—	21,572.80	21,572.80
	Milliken Mine Road.....	—	—	4,191.00	4,191.00
	Panel Mine Road.....	—	—	3,436.16	3,436.16
	Stanrock Mine Road.....	—	—	7,196.32	7,196.32
	Old Garden River Road.....	—	196,738.04	—	196,738.04
	Point Deschenes Road.....	—	64,842.67	—	64,842.67
	Sandbanks Provincial Park Road.....	—	89,406.07	—	89,406.07
	Sec. Hwy. 508—Mountain Chute Development.....	—	3,472.65	—	3,472.65
	Ste. Marie Among The Hurons Road (2 mi. E. of Midland).....	—	16,132.47	—	16,132.47
TOTAL EXPENDITURE ALLOCATED TO ACCESS AND INDUSTRIAL ROADS.....			\$ 370,591.90	\$ 91,156.05	\$ 461,747.95

LOCATION	CONSTRUCTION	MAINTENANCE	TOTAL
OTHER PROGRAMS:			
Airport Road (North Bay).....	\$ —	\$ 2,034.42	\$ 2,034.42
Carleton Street Tunnel (St. Catharines) .....	354,214.24	—	354,214.24
Dixon Road (Metro Toronto).....	Cr. 16,806.95	—	Cr. 16,806.95
E. C. Rowe Boulevard (Windsor).....	5,892.84	—	5,892.84
International Airport Road (Metro Toronto).....	21,367.07	18,137.42	39,504.49
Lakeshore Road East of Hwy. 27 (Metro Toronto)	980.01	—	980.01
Macdonald-Cartier Bridge (Ottawa).....	1,279,645.07	—	1,279,645.07
Moose Creek Bridge (Township of Casey).....	66,081.62	—	66,081.62
Ottawa Queensway (Ottawa).....	1,895,827.75	3,280.66	1,899,108.41
Perley Bridge (Hawkesbury).....	9,883.37	40,083.32	49,966.69
Yonge Street (Metro Toronto).....	54.20	—	54.20
Connecting Links.....	9,955,132.92	390,462.10	10,345,595.02
Development Roads.....	17,003,685.10	74,020.59	17,077,705.69
Ferries.....	110,367.36	724,444.11	834,811.47
Lands and Buildings.....	2,426,290.40	369,984.95	2,796,275.35
Miscellaneous Surveys.....	66,231.93	—	66,231.93
Sidewalks.....	66,813.46	—	66,813.46
Storm Sewers.....	16,179.78	—	16,179.78
UNINCORPORATED TOWNSHIP ROADS:			
Statute Labour Board.....	318,552.41	533,591.96	852,144.37
Local Road Board.....	93,354.57	125,630.32	218,984.89
Settlers (Special).....	28,339.16	38,971.29	67,310.45
Indian Reserves.....	—	16,248.30	16,248.30
Weight Scales.....	93,199.43	7,116.07	100,315.50
HIGHWAY TOTALS.....	\$168,819,731.36	\$39,252,320.57	\$208,072,051.93
Sundry unallocated, District Office, Administrative Engineering, Building, Inventory Charges, etc.....	\$ 2,485,904.44	\$ 8,770,297.61	\$ 11,256,202.05
TOTAL EXPENDITURES.....	<u>\$171,305,635.80</u>	<u>\$48,022,618.18</u>	<u>\$219,328,253.98</u>

[ ] Indicates that two highways share the same route; the mileage is shown against the bracketed highway

## APPENDIX No. 4

## Counties

## Chronological Summary of Road Expenditure and Provincial Subsidy

YEAR	NUMBER OF COUNTIES	APPROVED EXPENDITURE	GOVERNMENT SUBSIDY
1903	4	\$ 166,149.06	\$ 55,383.02
1904	7	291,085.42	97,028.48
1905	6	179,593.62	59,864.53
1906	8	247,102.37	82,367.45
1907	14	383,518.86	127,839.62
1908	15	429,393.57	143,131.16
1909	16	440,374.08	146,791.36
1910	17	553,312.61	184,437.54
1911	19	712,072.52	237,357.50
1912	20	898,631.18	299,543.69
1913	20	847,684.15	282,561.35
1914	20	785,521.93	261,840.61
1915	20	811,540.05	270,513.34
1916	21	955,447.19	327,663.76
1917	30	1,388,341.87	483,621.32
1918	36	2,226,899.70	815,440.01
1919	37	5,714,937.19	2,623,719.24
1920	37	7,956,863.72	3,626,418.08
1921	37	11,078,288.39	5,119,882.26
1922	37	9,162,491.79	4,258,339.83
1923	37	7,403,509.96	3,418,523.07
1924	37	6,861,451.62	3,214,321.50
1925	37	6,608,431.04	3,222,678.10
1926	37	5,838,445.12	2,913,660.96
1927	37	7,424,464.85	3,706,719.88
1928	37	8,784,420.42	4,360,222.86
1929	37	9,212,758.04	4,591,110.16
1930	37	8,929,424.27	4,463,527.11
1931	37	7,265,350.65	3,625,860.66
1932	37	4,214,410.70	2,106,457.18
1933	37	3,058,622.91	1,529,228.37
1934	37	3,391,768.96	1,695,291.35
1935	37	3,107,215.32	1,553,273.39
1936	37	3,438,188.53	1,718,944.63
1937	37	4,062,753.39	2,031,372.49
1938	37	4,686,333.38	2,342,971.65
1939	37	4,775,109.01	2,387,240.73
1940	37	4,496,702.25	2,247,977.06
1941	37	4,805,301.60	2,402,650.75
1942	37	3,221,505.02	1,610,752.54
1943	37	3,951,745.47	1,975,872.73
1944	37	4,675,028.89	2,365,507.20
1945	37	5,692,079.85	2,898,135.97
1946	37	7,392,946.45	3,769,755.43
1947	37	9,597,750.67	5,064,601.24
1948	37	11,345,808.93	6,176,598.43



YEAR	NUMBER OF COUNTIES	APPROVED EXPENDITURE	GOVERNMENT SUBSIDY
1949	37	\$ 12,645,251.23	\$ 6,949,735.96
1950	37	12,863,429.71	6,923,703.44
1951	37	15,136,060.35	8,058,376.21
1952	37	17,373,344.83	9,276,797.84
1953	37	16,404,875.09	8,822,596.50
1954	37	17,221,063.01	9,393,936.07
1955	37	19,193,907.77	10,304,707.49
1956	37	22,632,299.59	12,042,792.32
1957	37	25,310,514.10	13,832,163.98
1958	37	27,044,966.20	14,603,895.24
1959	37	31,478,080.94	17,094,520.86
1960	37	32,090,731.87	17,613,395.23
1961	37	31,210,823.16	17,179,416.16
1962	37	35,033,598.28	19,025,879.89
1963	37	36,470,286.63	19,784,038.11
1964	37	37,118,003.14	20,361,773.04
1965	37	42,002,954.92	23,261,397.01
TOTALS TO DATE.....		\$630,700,967.39	\$331,426,124.94

## APPENDIX No. 5

## County Road Mileages and Expenditures

From Inception of County Road Systems to December 31st, 1965

Provincial Subsidies on 1965 Expenditures Being Paid in the 1965-66 Fiscal Year

COUNTY	YEAR OF ESTAB- LISH- MENT OF SYSTEM	ROAD MILEAGES			TOTAL APPROVED EXPENDITURES TO END OF 1965	TOTAL GOVERNMENT GRANT
		COUNTY ROADS	COUNTY SUB- URBAN	TOTAL		
Brant.....	1917	76.1	52.5	128.6	\$ 10,047,226.50	\$ 5,404,221.13
Bruce.....	1917	289.3	—	289.3	15,058,822.93	8,076,836.69
Carleton.....	1910	173.2	111.3	284.5	28,946,612.32	15,145,480.27
Dufferin.....	1918	167.7	—	167.7	6,923,063.57	3,560,484.07
Elgin.....	1917	267.4	25.0	292.4	14,797,192.11	7,800,025.18
Essex.....	1916	206.6	53.0	259.6	25,307,390.17	13,175,181.43
Frontenac.....	1907	134.3	21.1	155.4	7,986,335.34	4,123,984.86
Grey.....	1918	317.4	25.5	342.9	16,640,823.15	8,616,276.99
Haldimand.....	1912	157.8	—	157.8	14,389,076.65	7,705,491.97
Halton.....	1907	151.9	—	151.9	11,912,616.25	6,094,096.76
Hastings.....	1904	241.0	16.2	257.2	10,980,702.57	5,601,945.09
Huron.....	1917	385.0	—	385.0	17,393,814.12	9,436,225.11
Kent.....	1917	379.0	31.5	410.5	25,268,715.01	14,000,625.39
Lambton.....	1918	215.9	25.5	241.4	20,887,898.64	11,426,454.61
Lanark.....	1903	220.8	11.0	231.8	9,447,140.20	4,896,223.21
Leeds and Grenville.....	1910	299.8	33.1	332.9	13,526,645.38	6,826,308.05
Lennox and Addington.....	1906	168.5	—	168.5	8,621,883.88	4,465,554.17
Lincoln.....	1904	123.4	46.8	170.2	15,296,858.38	7,752,024.06
Middlesex.....	1906	322.2	67.6	389.8	30,968,497.82	16,894,173.48
Norfolk.....	1917	240.3	—	240.3	17,141,954.50	8,860,142.98
Northumberland and D.....	1918	295.3	12.7	308.0	16,185,845.46	8,450,176.23
Ontario.....	1918	228.3	35.2	263.5	16,812,673.39	8,939,544.39
Oxford.....	1904	202.5	13.9	216.4	16,708,088.01	8,776,637.90
Peel.....	1907	176.8	—	176.8	23,754,866.89	12,709,277.26
Perth.....	1907	171.8	29.5	201.3	10,769,938.51	5,598,334.94
Peterborough.....	1919	135.5	50.8	186.3	9,057,602.18	4,951,805.75
Prescott and Russell.....	1917	322.9	—	322.9	16,841,938.62	8,770,692.83
Prince Edward.....	1907	192.5	—	192.5	8,289,774.63	4,183,079.80
Renfrew.....	1918	220.2	—	220.2	13,207,851.81	6,885,956.70
Simcoe.....	1903	268.3	18.2	286.5	18,308,560.28	9,392,329.25
Stormont, D, G.....	1917	381.1	61.0	442.1	18,741,056.96	9,770,791.00
Victoria.....	1917	235.8	—	235.8	10,131,023.01	5,357,890.26
Waterloo.....	1908	101.3	117.0	218.3	19,754,588.68	10,626,809.66
Welland.....	1912	98.1	44.2	142.3	21,383,876.80	11,037,462.21
Wellington.....	1903	325.8	35.3	361.1	20,412,210.28	10,831,999.78
Wentworth.....	1903	1.7	167.8	169.5	18,327,789.05	9,253,782.75
York.....	1911	8.9	195.5	204.4	50,470,013.34	26,027,798.73
TOTALS.....		7904.4	1301.2	9205.6	\$630,700,967.39	\$331,426,124.94

**APPENDIX**  
**Summary of County**  
**(Government Subsidies Paid)**

	ROADS		BRIDGES AND CULVERTS	
	CONSTRUCTION	MAINTENANCE	CONSTRUCTION	MAINTENANCE
Brant.....	\$ 355,378.72	\$ 151,549.93	\$ 48,344.82	\$ 4,797.83
Bruce.....	565,957.85	178,052.20	175,960.50	5,224.63
Carleton.....	468,302.76	111,038.41	59,735.23	6,462.01
Carleton (Ottawa Sub.).....	837,296.41	175,519.86	49,234.11	11,647.68
Dufferin.....	187,430.08	131,844.77	54,651.87	888.22
Elgin.....	482,434.98	244,870.14	68,493.93	17,537.32
Essex.....	886,066.80	338,369.78	26,846.71	31,744.01
Frontenac.....	466,256.07	182,917.02	74,202.79	562.29
Grey.....	550,711.08	300,386.70	51,504.00	7,713.98
Haldimand.....	461,617.18	74,662.88	288,454.45	281.88
Halton.....	676,929.34	234,335.72	135,166.12	4,694.98
Hastings.....	205,230.11	233,976.83	127,056.24	6,612.30
Huron.....	489,707.00	388,001.94	184,943.94	6,298.42
Kent.....	615,591.46	303,293.36	650,526.62	14,971.75
Lambton.....	969,783.62	261,878.35	576,603.78	2,818.24
Lanark.....	260,436.80	154,483.37	87,083.77	5,012.76
Leeds and Grenville.....	418,786.10	294,166.26	35,872.00	11,003.73
Lennox and Addington.....	611,844.78	133,338.00	56,561.90	747.05
Lincoln.....	463,208.84	175,413.57	198,422.57	3,878.16
Middlesex.....	956,275.53	385,161.14	743,522.84	36,974.11
Norfolk.....	807,777.60	257,438.63	103,151.83	12,803.53
Northumberland and Durham.....	596,666.26	371,657.55	79,840.54	9,388.70
Ontario.....	1,315,515.88	279,360.61	299,444.71	13,096.84
Oxford.....	579,198.66	246,236.66	262,823.10	13,203.83
Peel.....	739,835.28	331,480.28	80,002.16	4,998.11
Perth.....	330,785.24	177,473.30	71,860.35	3,399.04
Peterborough.....	304,194.44	206,994.57	170,760.36	2,126.62
Prescott and Russell.....	666,799.68	183,637.95	464,296.85	25,511.80
Prince Edward.....	163,381.21	203,910.44	28,535.77	6,826.04
Renfrew.....	268,712.20	278,595.44	46,704.94	8,284.34
Simcoe.....	601,844.04	298,991.24	176,092.12	5,303.56
Stormont, Dundas and Glengarry...	393,255.42	293,604.06	588,125.06	4,937.63
Victoria.....	260,846.78	211,521.85	23,255.78	1,594.25
Waterloo.....	444,773.60	422,794.18	292,994.26	32,637.97
Welland.....	669,647.92	304,000.00	179,683.28	15,023.79
Wellington.....	219,794.48	326,260.30	194,831.64	14,607.98
Wentworth.....	392,354.70	307,550.61	48,370.71	10,770.42
York.....	2,109,744.68	306,181.62	361,009.70	3,708.16
TOTAL.....	\$21,794,373.58	\$9,460,949.52	\$7,164,971.35	\$ 368,093.96

**Summary of Metropolitan**

Metro Toronto Roads (50%).....	\$23,979,214.98	\$2,643,503.17	\$6,331,102.14	\$ 244,606.66
Metro Toronto Subway (33 $\frac{1}{3}$ %)....	10,402,103.13	—	—	—

No. 6  
Road Expenditures  
in 1965-66 Fiscal Year)

WINTER CONTROL (MAINTENANCE)	CONSTRUCTION	APPROVED EXPENDITURE MAINTENANCE	TOTAL	GOVERNMENT SUBSIDY 50% AND 80%
\$ 30,775.52	\$ 403,723.54	\$ 187,123.28	\$ 590,846.82	\$ 311,366.21
119,825.00	741,918.35	303,101.83	1,045,020.18	576,865.63
54,910.06	528,037.99	172,410.48	700,448.47	370,083.41
117,703.06	886,530.52	304,870.60	1,191,401.12	613,965.09
40,513.86	242,081.95	173,246.85	415,328.80	224,326.43
43,225.27	550,928.91	305,632.73	856,561.64	454,090.20
49,313.59	912,913.51	419,427.38	1,332,340.89	683,747.65
46,587.54	540,458.86	230,066.85	770,525.71	407,692.37
138,663.15	602,215.08	446,763.83	1,048,978.91	542,254.85
12,837.77	750,071.63	87,782.53	837,854.16	505,547.97
79,944.62	812,095.46	318,975.32	1,131,070.78	607,493.72
64,186.52	332,286.35	304,775.65	637,062.00	358,631.56
106,465.79	674,650.94	500,766.15	1,175,417.09	645,081.26
23,103.98	1,266,118.08	341,369.09	1,607,487.17	1,003,393.09
29,648.02	1,546,387.40	294,344.61	1,840,732.01	1,094,192.60
53,872.40	347,520.57	213,368.53	560,889.10	308,073.51
101,661.71	454,658.10	406,831.70	861,489.80	444,807.62
41,644.67	668,406.68	175,729.72	844,136.40	439,260.88
70,669.92	661,631.41	249,961.65	911,593.06	516,486.75
100,088.48	1,699,798.37	522,223.73	2,222,022.10	1,345,160.14
43,037.22	910,929.43	313,279.38	1,224,208.81	646,891.02
118,919.76	676,506.80	499,966.01	1,176,472.81	615,005.17
133,545.57	1,614,960.59	426,003.02	2,040,963.61	1,114,244.27
67,357.06	842,021.76	326,797.55	1,168,819.31	667,217.74
132,386.37	819,837.44	468,864.76	1,288,702.20	669,851.18
32,005.26	402,645.59	212,877.60	615,523.19	330,339.42
47,305.76	474,954.80	256,426.95	731,381.75	417,556.96
67,165.84	1,131,096.53	276,315.59	1,407,412.12	850,648.66
40,765.69	191,916.98	251,502.17	443,419.15	232,318.11
70,999.43	315,417.14	357,879.21	673,296.35	353,144.96
151,176.00	777,936.16	455,470.80	1,233,406.96	671,122.18
80,391.42	981,380.48	378,933.11	1,360,313.59	858,075.60
72,273.37	284,102.56	285,389.47	569,492.03	292,201.02
95,736.41	737,767.86	551,168.56	1,288,936.42	742,157.88
142,000.00	849,331.20	461,023.79	1,310,354.99	713,589.61
134,725.76	414,626.12	475,594.04	890,220.16	507,941.97
161,587.63	440,725.41	479,908.66	920,634.07	478,059.37
297,547.03	2,470,754.38	607,436.81	3,078,191.19	1,648,510.95
\$3,214,566.51	\$28,959,344.93	\$13,043,609.99	\$42,002,954.92	\$23,261,397.01
Road Expenditures — 1965				
\$3,111,156.31	\$30,310,317.12	\$ 5,999,266.14	\$36,309,583.26	\$18,154,791.63
—	10,402,103.13	—	10,402,103.13	3,467,367.71



## APPENDIX No. 7

**Incorporated Townships—Chronological Summary of Road Expenditure and Provincial  
Subsidy Including Improvement Districts and Indian Reserves**

YEAR	NO. OF TOWNSHIPS	APPROVED EXPENDITURE	SUBSIDY
1920 to 1934	172-352	\$ 58,408,281.44	\$18,749,941.38
1935	353	2,945,424.37	1,233,806.48
1936	357	2,988,617.38	1,251,632.43
1937	358	3,857,518.61	1,943,344.98
1938	574	4,826,905.00	2,553,837.97
1939	583	5,392,981.59	2,865,752.12
1940	584	4,505,295.63	2,411,064.90
1941	584	5,452,286.74	2,917,816.44
1942	583	3,698,301.35	1,978,368.31
1943	584	5,512,990.52	2,929,508.15
1944	585	6,263,799.90	3,400,704.29
1945	596	7,696,533.87	4,177,608.83
1946	602	9,366,654.59	5,131,432.11
1947	604	12,562,798.76	7,064,222.50
1948	606	13,688,529.08	7,763,289.85
1949	609	15,262,451.16	8,658,125.77
1950	610	15,852,838.23	8,944,246.08
1951	610	18,774,705.27	10,544,324.37
1952	614	21,261,356.88	11,966,206.37
1953	615	20,448,782.51	11,477,684.36
1954	617	23,346,392.74	13,185,561.47
1955	619	27,026,146.81	15,376,232.29
1956	623	30,080,387.33	16,908,428.56
1957	624	33,147,636.96	18,530,211.67
1958	627	35,683,958.31	19,867,541.32
1959	626	41,789,335.40	23,376,726.39
1960	625	45,098,684.79	25,150,102.14
1961	632	44,505,542.38	24,919,087.33
1962	633	46,022,546.96	26,082,619.19
1963	634	51,317,254.17	29,923,461.38
1964	633	53,234,002.84	31,228,752.16
1965	635	57,009,416.46	33,473,942.31
TOTALS.....		\$727,028,358.03	\$395,985,583.90

## APPENDIX No. 8

**Cities, Towns and Villages**

**Chronological Summary of Road Expenditures and Provincial Subsidy**

YEAR	NO. OF URBAN MUNICIPALITIES	APPROVED EXPENDITURE	SUBSIDY
1947	324	\$ 5,334,316.72	\$ 2,667,158.49
1948	327	5,614,300.68	2,807,150.46
1949	330	12,194,258.56	4,550,703.10
1950	331	12,834,506.55	4,823,922.36
1951	334	15,956,137.03	5,931,088.54
1952	333	15,898,102.64	5,946,052.04
1953	335	17,598,631.85	6,890,106.26
1954	336	18,223,848.41	7,021,797.64
1955	338	21,703,070.95	8,560,475.48
1956	339	24,456,353.43	9,612,156.92
1957	339	25,546,531.26	10,188,038.48
1958	340	30,231,140.62	11,723,534.51
1959	340	32,890,747.85	12,774,059.54
1960	341	36,899,762.02	14,506,072.66
1961	341	37,130,872.81	14,862,154.63
1962	345	40,193,137.14	15,903,508.14
1963	346	44,397,369.60	17,580,312.26
1964	346	51,665,358.26	20,535,895.02
1965	348	60,819,523.20	24,298,707.63
TOTALS.....		\$509,587,969.58	\$201,182,894.16

## APPENDIX No. 9

## Mileage of Urban Road Surfaces at the End of 1965

## Roads Under Local Authority

COUNTIES	LEGALLY OPEN	EARTH GRADED AND DRAINED	GRAVEL OR STONE	LIGHT BITUMI- NOUS	ASPHALT CON- CRETE	CEMENT CON- CRETE	OTHER	TOTAL
Brant.....	—	—	52.3	83.8	35.3	23.0	—	194.4
Bruce.....	6.7	4.8	52.0	63.0	24.6	—	—	151.1
Carleton.....	3.6	17.4	51.6	176.5	285.3	2.0	—	536.4
Dufferin.....	1.4	1.4	13.3	0.5	12.6	1.7	—	30.9
Elgin.....	13.8	1.2	32.8	40.7	39.8	1.1	1.1	130.5
Essex.....	3.7	17.6	65.4	52.6	104.4	263.3	2.7	509.7
Frontenac.....	0.3	—	—	17.4	77.4	0.2	—	95.3
Grey.....	0.5	28.8	35.2	70.5	24.4	2.3	—	161.7
Haldimand.....	2.5	4.9	19.1	24.6	10.4	1.3	—	62.8
Halton.....	7.2	14.7	175.8	218.0	135.7	4.8	—	556.2
Hastings.....	0.5	0.3	25.5	71.2	31.9	0.2	—	129.6
Huron.....	2.7	0.9	49.4	38.4	27.2	—	—	118.6
Kent.....	8.0	8.1	51.7	11.5	135.6	10.2	—	225.1
Lambton.....	13.6	4.5	73.2	73.3	71.7	6.3	—	242.6
Lanark.....	26.3	0.3	30.6	30.3	19.0	0.7	—	107.2
Leeds and Grenville.....	2.0	0.9	16.0	33.1	62.1	4.5	—	118.6
Lennox and Addington.....	0.2	—	6.2	11.2	5.2	—	—	22.8
Lincoln.....	1.7	7.0	30.3	210.1	72.4	59.5	—	381.0
Middlesex.....	13.6	2.0	102.0	223.6	178.3	1.7	—	521.2
Norfolk.....	4.8	2.4	17.2	39.1	22.8	1.5	—	87.8
Northumberland and Durham.....	5.6	1.3	56.7	77.3	73.4	4.5	—	218.8
Ontario.....	17.5	0.2	62.9	97.8	147.9	—	—	326.3
Oxford.....	8.7	1.0	41.6	68.2	40.2	2.7	0.4	162.8
Peel.....	0.9	1.4	19.4	31.6	53.3	0.3	—	106.9
Perth.....	10.9	6.8	52.6	46.5	38.8	0.7	—	156.3
Peterborough.....	8.3	0.1	36.2	72.9	57.5	6.0	—	181.0
Prescott and Russell.....	6.5	3.8	10.5	15.5	24.8	—	—	61.1
Prince Edward.....	—	0.1	1.6	6.6	12.4	0.9	—	21.6
Renfrew.....	1.6	4.7	53.1	42.8	66.2	—	—	168.4
Simcoe.....	17.4	16.9	85.0	99.1	110.5	6.9	—	335.8
Stormont, Dundas and Glengarry.....	3.1	—	37.6	48.1	19.3	29.6	18.9	156.6
Victoria.....	15.4	—	48.3	3.7	27.0	—	—	94.4
Waterloo.....	19.5	10.9	47.1	192.7	162.3	6.9	33.8	473.2
Welland.....	15.2	3.6	44.3	278.2	143.3	8.6	—	493.2
Wellington.....	12.5	3.6	33.9	99.8	78.5	3.6	—	231.9
Wentworth.....	0.5	2.9	24.6	151.3	361.2	1.6	—	542.1
York.....	0.3	2.2	16.7	51.7	65.0	—	—	135.9
TOTAL COUNTIES.....	257.0	176.7	1,571.7	2,873.2	2,857.7	456.6	56.9	—
Metro. Toronto Area....	1.1	—	7.4	3.9	576.1	6.3	6.4	601.2
DISTRICTS								
Algoma.....	36.3	7.3	170.9	16.2	134.0	4.3	0.1	369.1
Cochrane.....	33.3	7.7	66.6	23.9	49.2	—	—	180.7
Haliburton.....	—	—	—	—	—	—	—	—
Kenora.....	—	0.2	54.5	10.1	34.9	0.1	—	99.8
Manitowlin.....	2.3	2.8	12.8	1.5	0.5	—	—	19.9
Muskoka.....	18.0	0.4	42.8	25.4	23.7	—	—	110.3
Nipissing.....	8.1	—	34.3	6.9	49.1	—	—	98.4
Parry Sound.....	29.5	0.6	34.7	2.0	24.4	—	—	91.2
Rainy River.....	—	1.0	40.2	8.5	12.3	0.3	0.4	62.7
Sudbury.....	15.2	3.4	75.8	85.6	125.9	0.9	—	306.8
Temiskaming.....	—	—	34.8	2.3	23.4	—	—	60.5
Thunder Bay.....	—	—	90.3	49.2	115.1	—	—	254.6
TOTAL DISTRICTS.....	142.7	23.4	657.7	231.6	592.5	5.6	0.5	1,654.0
GRAND TOTAL.....	400.8	200.1	2,236.8	3,108.7	4,026.3	468.5	63.8	10,505.0

# APPENDIX

## Mileage of Road Surfaces

COUNTY ROADS							
COUNTY	LEGALLY OPEN	EARTH GRADED AND DRAINED	GRAVEL OR STONE	LIGHT BITUMI- NOUS SURFACE	ASPHALT CON- CRETE	CEMENT CON- CRETE	OTHER
Brant.....	—	—	21.5	106.7	0.4	—	—
Bruce.....	—	—	95.7	118.4	75.2	—	—
Carleton.....	—	—	14.2	262.3	8.0	—	—
Dufferin.....	—	—	125.5	2.9	39.3	—	—
Elgin.....	—	0.6	97.6	172.5	21.7	—	—
Essex.....	—	—	72.6	70.3	96.0	10.6	10.1
Frontenac.....	—	—	32.0	106.4	17.0	—	—
Grey.....	—	—	228.6	95.1	19.2	—	—
Haldimand.....	—	—	29.7	128.1	—	—	—
Halton.....	—	—	35.1	70.3	46.5	—	—
Hastings.....	—	—	163.4	78.1	13.6	2.1	—
Huron.....	—	—	204.2	126.7	54.1	—	—
Kent.....	0.3	0.2	44.2	23.7	334.2	7.9	—
Lambton.....	—	—	68.8	67.4	97.7	0.1	7.4
Lanark.....	—	—	116.4	115.4	—	—	—
Leeds and Grenville.....	—	—	141.7	185.6	4.4	1.2	—
Lennox and Addington.....	—	—	10.0	139.9	18.6	—	—
Lincoln.....	0.9	—	14.2	135.5	19.6	—	—
Middlesex.....	—	—	74.6	119.0	183.1	13.1	—
Norfolk.....	1.4	3.4	27.8	205.2	2.4	0.1	—
Northumberland and Durham.....	—	—	77.1	173.4	57.5	—	—
Ontario.....	—	—	67.5	89.5	103.7	2.8	—
Oxford.....	—	—	53.4	98.6	52.9	11.5	—
Peel.....	—	—	22.2	69.8	81.5	3.3	—
Perth.....	—	—	43.4	91.7	66.2	—	—
Peterborough.....	—	—	98.4	45.6	42.3	—	—
Prescott and Russell.....	—	—	122.7	184.4	15.8	—	—
Prince Edward.....	—	—	52.9	115.0	24.6	—	—
Renfrew.....	—	—	48.9	7.4	163.9	—	—
Simcoe.....	—	—	139.2	45.1	102.2	—	—
Stormont, Dundas, Glengarry.....	—	—	117.8	273.4	50.3	0.6	—
Victoria.....	—	—	119.4	94.7	21.7	—	—
Waterloo.....	—	—	29.8	121.1	63.7	3.7	—
Welland.....	2.5	—	4.0	100.2	35.6	—	—
Wellington.....	—	—	154.8	123.8	82.5	—	—
Wentworth.....	—	—	2.5	161.1	5.9	—	—
York.....	—	—	17.3	23.4	163.7	—	—
TOTAL—COUNTIES.....	5.1	4.2	2,789.1	4,147.7	2,185.0	57.0	17.5
Metropolitan							
Metropolitan Toronto Area.....	4.0	—	1.8	5.8	346.7	8.3	—
DISTRICTS							
Algoma.....	—	—	—	—	—	—	—
Cochrane.....	—	—	—	—	—	—	—
Haliburton.....	—	—	—	—	—	—	—
Kenora.....	—	—	—	—	—	—	—
Manitoulin.....	—	—	—	—	—	—	—
Muskoka.....	—	—	—	—	—	—	—
Nipissing.....	—	—	—	—	—	—	—
Parry Sound.....	—	—	—	—	—	—	—
Rainy River.....	—	—	—	—	—	—	—
Sudbury.....	—	—	—	—	—	—	—
Temiskaming.....	—	—	—	—	—	—	—
Thunder Bay.....	—	—	—	—	—	—	—
TOTAL—DISTRICTS.....	—	—	—	—	—	—	—
Unorganized Townships.....	—	—	—	—	—	—	—
GRAND TOTALS.....	9.1	4.2	2,790.9	4,153.5	2,531.7	65.3	17.5

No. 10  
at the End of 1965

## INCORPORATED — TOWNSHIP ROADS

TOTAL	LEGALLY OPEN	EARTH GRADED AND DRAINED	GRAVEL OR STONE	LIGHT BITUMI- NOUS SURFACE	ASPHALT CON- CRETE	CEMENT CON- CRETE	OTHER	TOTAL
128.6	12.3	12.6	457.5	62.8	—	—	—	545.2
289.3	81.1	98.5	1,622.4	47.2	9.1	—	—	1,858.3
284.5	37.9	67.6	823.9	61.7	8.0	—	—	999.1
167.7	31.9	21.7	691.9	3.5	0.3	—	—	749.3
292.4	26.2	41.0	790.5	10.9	2.8	0.5	—	871.9
259.6	22.1	39.4	812.7	117.9	74.0	28.2	2.3	1,096.6
155.4	153.1	69.1	903.4	42.5	19.9	—	—	1,188.0
342.9	139.8	112.0	1,936.3	19.7	5.4	0.5	—	2,213.7
157.8	25.0	48.1	451.4	79.0	12.9	—	—	616.4
151.9	11.5	2.0	207.4	1.7	1.5	—	—	224.1
257.2	255.2	210.1	1,279.0	30.0	3.2	—	—	1,777.5
385.0	17.1	50.4	1,459.6	14.3	12.9	—	—	1,554.3
410.5	4.2	18.3	1,157.4	2.2	24.0	0.4	4.0	1,210.5
241.4	15.3	123.1	1,241.1	57.1	8.9	—	14.1	1,459.6
231.8	51.6	89.1	833.3	35.8	—	—	—	1,009.8
332.9	223.0	98.9	968.2	79.3	26.5	0.9	—	1,396.8
168.5	156.8	63.9	544.4	38.9	5.2	—	—	809.2
170.2	80.2	77.8	426.7	78.1	3.9	0.9	—	667.6
389.8	43.3	24.8	1,553.0	27.3	16.0	0.4	—	1,664.8
240.3	28.2	92.6	501.4	217.0	50.7	—	—	889.9
308.0	479.1	218.9	1,737.6	146.9	23.0	—	—	2,605.5
263.5	155.1	36.1	955.9	60.9	67.7	—	—	1,275.7
216.4	10.8	5.0	979.0	14.3	36.7	—	—	1,045.8
176.8	28.8	20.6	468.8	164.3	131.4	—	—	813.9
201.3	20.5	5.3	1,016.9	2.1	1.4	—	—	1,046.2
186.3	46.4	28.3	865.7	23.8	9.5	—	—	973.7
322.9	54.4	230.0	713.3	7.7	—	—	—	1,005.4
192.5	23.6	7.1	330.8	16.2	4.9	1.2	—	383.8
220.2	204.0	323.0	1,285.8	1.4	21.0	—	—	1,835.2
286.5	148.0	48.2	1,959.1	118.2	68.3	—	—	2,341.8
442.1	48.5	109.3	1,072.6	33.7	24.3	—	—	1,288.4
235.8	40.9	32.7	869.7	7.5	0.5	—	—	951.3
218.3	7.1	2.7	523.1	68.8	3.4	1.3	—	606.4
142.3	185.8	138.5	416.9	213.1	14.8	1.1	—	970.2
361.1	24.2	64.4	1,040.9	32.7	9.7	0.2	—	1,172.1
169.5	37.7	25.2	428.9	64.9	—	—	—	556.7
204.4	58.5	3.9	712.3	69.0	112.6	—	—	956.3
9,205.6	2,989.2	2,660.2	34,038.8	2,072.4	814.4	35.6	20.4	42,631.0
<b>Roads</b>								
366.6	95.6	49.2	80.0	457.8	946.0	155.2	—	1,783.8
—	171.8	70.9	527.3	1.3	22.1	—	—	793.4
—	642.9	50.9	481.2	16.9	11.4	—	—	1,203.3
—	28.7	26.3	416.6	75.3	0.4	—	—	547.3
—	1.9	1.5	183.0	1.0	0.3	—	0.7	188.4
—	22.3	47.2	449.9	—	1.0	—	—	520.4
—	104.2	84.2	672.9	154.3	0.4	—	1.8	1,017.8
—	67.6	54.0	468.9	33.7	32.4	—	—	656.6
—	195.7	46.5	857.8	39.9	12.5	—	—	1,152.4
—	28.2	48.6	525.9	1.1	—	—	—	603.8
—	60.4	70.3	615.2	9.3	26.6	—	26.2	808.0
—	66.5	34.5	520.5	21.4	30.9	—	—	673.8
—	56.5	22.2	551.6	115.8	48.9	—	—	795.0
—	1,146.7	557.1	6,270.8	470.0	186.9	—	28.7	8,960.2
—	483.8	584.8	3,441.0	5.8	1.9	—	—	4,517.3
9,572.2	5,015.3	3,851.3	43,830.6	3,006.0	1,949.2	190.8	49.1	57,892.3



## APPENDIX No. 11

Summary of Expenditures on Urban Streets — 1965  
Approved 1965 Expenditures by Cities, Towns and Villages Under Part X  
of the Highway Improvement Act

## APPROVED EXPENDITURES—1965

MUNICIPAL ROAD DISTRICT No.	CITIES (32) SEP. TOWNS (7)	TOWNS (150)	VILLAGES (159)	URBAN TOTAL (348)	GOVERNMENT SUBSIDY 33⅓%, 50% AND 80%
1	\$ 2,441,449.08	\$ 738,268.73	\$ 284,982.76	\$ 3,464,700.57	\$ 1,335,509.46
2	4,612,844.47	882,531.09	189,395.42	5,684,770.98	2,353,150.05
3	3,101,032.01	1,235,431.26	215,355.42	4,551,818.69	1,786,463.28
4	8,123,959.81	3,566,675.79	157,917.37	11,848,552.97	4,904,616.11
5	856,651.52	1,070,471.44	206,615.83	2,133,738.79	947,716.47
6	1,989,142.41	1,553,893.81	296,229.00	3,839,265.22	1,603,446.89
6 MTA	7,090,455.39	776,116.63	212,993.32	8,079,565.34	2,858,395.78
7	826,289.57	727,748.18	134,991.35	1,689,029.10	726,070.65
8	1,406,319.63	70,764.62	146,517.79	1,623,602.04	591,591.97
9	7,892,409.95	1,118,085.13	330,304.83	9,340,799.91	3,371,312.51
10	—	—	54,433.66	54,433.66	29,928.84
11	—	204,568.67	55,016.87	259,585.54	139,103.87
13	287,736.34	249,246.97	24,962.80	561,946.11	236,159.18
14	—	725,841.55	2,304.94	728,146.49	366,618.32
16	—	1,003,876.95	—	1,003,876.95	524,072.88
17	1,686,749.96	587,550.83	—	2,274,300.79	1,000,149.66
18	1,729,826.13	32,888.57	4,826.22	1,767,540.92	764,206.91
19	1,231,143.58	30,538.97	—	1,261,682.55	426,432.60
20	—	652,166.58	—	652,166.58	333,762.20
TOTALS	\$43,276,009.85	\$15,226,665.77	\$2,316,847.58	\$60,819,523.20	\$24,298,707.63

**APPENDIX No. 12**  
(Contained in Appendix No. 2A)

**APPENDIX No. 13**  
**Types of Surface on the King's Highway**  
**As of March 31, 1966**

COUNTY OR DISTRICT	CONCRETE	HIGH CLASS	LOW CLASS	GRAVEL	TOTAL
		BITUMINOUS	BITUMINOUS		
Algoma.....	—	330.9	105.7	45.4	482.0
Brant.....	20.5	56.0	9.6	4.7	90.8
Bruce.....	4.8	114.2	25.8	18.3	163.1
Carleton.....	12.1	136.3	—	—	148.4
Cochrane.....	—	316.7	86.5	9.5	412.7
Dufferin.....	0.8	80.0	1.0	—	81.8
Elgin.....	36.0	108.9	—	—	144.9
Essex.....	47.2	151.8	25.4	—	224.4
Frontenac.....	5.0	125.8	47.0	—	177.8
Grey.....	4.9	130.5	9.1	11.0	155.5
Haldimand.....	—	71.6	2.3	—	73.9
Haliburton.....	—	50.1	66.5	—	116.6
Halton.....	16.7	88.7	—	—	105.4
Hastings.....	4.8	147.5	84.5	5.0	241.8
Huron.....	—	205.4	—	—	205.4
Kenora.....	—	333.6	43.1	121.3	498.0
Kent.....	52.7	157.2	—	1.0	210.9
Lambton.....	29.1	160.5	—	—	189.6
Lanark.....	—	114.3	10.2	—	124.5
Leeds and Grenville.....	28.8	198.7	15.8	—	243.3
Lennox and Addington.....	20.7	79.5	44.8	6.5	151.5
Lincoln.....	10.6	71.6	—	—	82.2
Manitoulin.....	—	17.9	8.4	28.8	55.1
Middlesex.....	15.8	200.8	—	7.6	224.2
Muskoka.....	—	149.6	42.1	—	191.7
Nipissing.....	9.7	196.9	109.8	55.3	371.7
Norfolk.....	—	92.9	3.9	—	96.8
Northumberland and Durham.....	—	250.0	13.7	6.3	270.0
Ontario.....	11.7	128.7	15.0	7.7	163.1
Oxford.....	—	135.2	—	5.8	141.0
Parry Sound.....	—	143.2	39.9	9.2	192.2
Peel.....	11.1	105.0	9.1	—	125.2
Perth.....	—	130.5	—	—	130.5
Peterborough.....	6.0	77.3	27.3	13.4	124.0
Prescott and Russell.....	—	103.9	—	2.0	105.9
Prince Edward.....	—	51.4	10.6	—	62.0
Rainy River.....	—	98.5	50.8	62.2	211.5
Renfrew.....	—	208.1	81.0	10.4	299.5
Simcoe.....	5.8	295.8	7.1	4.3	313.0
Stormont, Dundas and Glengarry.....	43.0	160.0	11.0	—	214.0
Sudbury.....	—	235.1	33.2	172.3	440.6
Temiskaming.....	—	164.2	92.9	14.6	271.7
Thunder Bay.....	—	606.3	20.7	18.1	645.1
Victoria.....	—	106.7	43.0	8.2	157.9
Waterloo.....	10.0	83.0	—	0.2	93.2
Welland.....	27.9	85.9	0.6	—	114.4
Wellington.....	10.4	147.4	—	12.7	170.5
Wentworth.....	2.1	124.9	24.3	—	151.3
York.....	16.0	161.4	29.3	—	206.7
TOTALS.....	464.2	7,490.3	1,251.0	661.8	9,867.3

## APPENDIX No. 14

**Summary of King's Highway Mileage by Highway Districts  
As of March 31, 1966**

DISTRICT	CONCRETE	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	TOTAL
Chatham.....	129.0	469.5	25.4	1.0	624.9
London.....	51.8	543.9	3.9	13.4	613.0
Stratford.....	7.5	624.9	1.0	12.9	646.3
Hamilton.....	83.5	524.5	36.8	4.7	649.5
Owen Sound.....	15.5	519.4	35.6	33.6	604.1
Toronto.....	46.8	406.1	59.8	7.7	520.4
Port Hope.....	6.0	475.7	70.4	14.5	566.6
Kingston.....	57.7	518.7	109.1	6.5	692.0
Ottawa.....	56.7	621.8	57.2	2.0	737.7
Bancroft.....	—	87.5	232.7	46.8	367.0
Huntsville.....	—	277.3	113.9	9.2	400.4
North Bay.....	9.7	300.1	72.3	47.8	429.9
New Liskeard.....	—	260.2	172.3	44.0	476.5
Cochrane.....	—	298.0	11.3	9.5	318.8
Sudbury.....	—	292.9	29.0	77.0	398.9
Sault Ste. Marie.....	—	343.3	105.7	129.6	578.6
Fort William.....	—	574.4	20.7	41.6	636.7
Kenora.....	—	352.1	93.9	160.0	606.0
TOTALS.....	464.2	7,490.3	1,251.0	661.8	9,867.3

## APPENDIX No. 15

**Types of Surface on Secondary Highways  
As of March 31, 1966**

COUNTY OR DISTRICT	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	EARTH	TOTAL
Algoma.....	15.1	43.0	273.0	—	331.1
Cochrane.....	4.7	54.3	114.9	—	173.9
Frontenac.....	—	12.2	24.3	—	36.5
Haliburton.....	6.1	51.0	45.5	—	102.6
Hastings.....	3.1	19.2	18.1	—	40.4
Kenora.....	8.8	8.2	158.4	—	175.4
Lanark.....	—	14.0	—	—	14.0
Lennox and Addington.....	6.2	—	6.5	—	12.7
Manitoulin.....	0.2	40.7	127.7	—	168.6
Muskoka.....	8.0	64.6	31.1	—	103.7
Nipissing.....	4.3	21.4	70.8	—	96.5
Parry Sound.....	—	128.6	112.3	—	240.9
Peterborough.....	0.3	27.0	43.2	—	70.5
Rainy River.....	—	10.5	210.4	—	220.9
Renfrew.....	8.8	49.7	71.9	—	130.4
Sudbury.....	33.6	35.1	172.9	—	241.6
Temiskaming.....	7.2	64.7	144.4	—	216.3
Thunder Bay.....	12.0	20.4	467.3	2.4	502.1
Victoria.....	5.1	28.9	32.6	—	66.6
TOTALS.....	123.5	693.5	2,125.3	2.4	2,944.7

APPENDIX No. 16

Summary of Secondary Highway Mileage by Highway Districts  
As of March 31, 1966

DISTRICT	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	TOTAL
Owen Sound.....	—	0.3	8.9	9.2
Port Hope.....	5.1	46.9	33.0	85.0
Kingston.....	8.7	6.3	9.3	24.3
Ottawa.....	—	32.8	13.5	46.3
Bancroft.....	14.2	105.6	175.7	295.5
Huntsville.....	8.0	143.6	110.5	262.1
North Bay.....	7.7	88.4	118.0	214.1
New Liskeard.....	11.6	115.9	246.1	373.6
Cochrane.....	0.3	3.1	152.5	155.9
Sudbury.....	32.0	69.3	293.7	395.0
Sault Ste. Marie.....	20.3	42.2	184.4	246.9
Fort William.....	6.8	30.9	451.2	488.9
Kenora.....	8.8	8.2	330.0	347.9
TOTALS.....	123.5	693.5	2,127.7	2,944.7

APPENDIX No. 17

Types of Surface on Tertiary Roads  
As of March 31, 1966

COUNTY OR DISTRICT	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	EARTH	TOTAL
Cochrane.....	—	—	12.5	—	12.5
Kenora.....	—	—	12.8	—	12.8
Nipissing.....	—	—	35.0	—	35.0
Sudbury.....	4.2	—	—	—	4.2
Thunder Bay.....	—	—	80.8	—	80.8
TOTALS.....	4.2	—	141.1	—	145.3

APPENDIX No. 18

Summary of Tertiary Road Mileage by Highway Districts  
As of March 31, 1966

DISTRICT	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	TOTAL
North Bay.....	—	—	35.0	35.0
Cochrane.....	—	—	12.5	12.5
Sudbury.....	4.2	—	—	4.2
Fort William.....	—	—	80.8	80.8
Kenora.....	—	—	12.8	12.8
TOTALS.....	4.2	—	141.1	145.3



**APPENDIX No. 19**  
**Road Mileages in Ontario**  
**As of March 31, 1966**

	TYPE OF PAVEMENT					TOTAL
	CONCRETE	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	EARTH	
King's Highway.....	464.2	7,490.3	1,251.0	661.8	—	9,867.3
Secondary Highways.....	—	123.5	693.5	2,125.3	2.4	2,944.7
Tertiary Road.....	—	4.2	—	141.1	—	145.3
TOTALS.....	464.2	7,618.0	1,944.5	2,928.2	2.4	12,957.3

**APPENDIX No. 20**  
**Schedule of Controlled Access Highways**  
**April 1, 1965 to March 31, 1966**

HIGHWAY	NAME OR LOCATION	DESIGNATED BY ONTARIO REGULATION	MILEAGE
		NUMBER	
6	Freelton By-pass (Townships of East and West Flamborough).....	73/66	1.90
7TC	Peterborough By-pass (Townships of Otonabee and Asphodel).....	258/65	8.69
7TC	Township of Waterloo.....	269/65	2.19
7, 12	Blackwater to Sunderland (Township of Brock).....	269/65	2.15
8	Township of Waterloo and Town of Preston.....	41/66	2.38
11, 17	North Bay By-pass (Township of Widdifield and City of North Bay).....	47/66	1.75
24A	Township of Brantford.....	82/66	4.72
27	Township of Tecumseth and West Gwillimbury.....	41/66	1.96
40	Townships of Dover and Chatham.....	82/66	3.64
49	Townships of Hallowell and Sophiasburgh.....	41/66	3.68
58	Township of Thorold.....	269/65	0.75
58	Township of Thorold.....	94/65	1.63
58	Township of Thorold and Town of Thorold.....	41/66	2.45
144	Sudbury to Timmins.....	317/65	141.75
401 E	Township of Elizabethtown.....	242/65	1.67
Carleton St. Tunnel	Township of Niagara and City of St. Catharines.....	94/65	0.83
St. Thomas By-pass			
Extension	Township of Southwold.....	243/65	5.45
Stoney Creek Expressway	Township of Saltfleet.....	41/66	1.28
TOTAL MILEAGE.....			188.87

## APPENDIX No. 21

**Schedule of Designations and Re-Designations of Sections of the King's Highway,  
Secondary Highway and Tertiary Road Systems for the  
Fiscal Year Ending March 31, 1966**

COUNTY OR DISTRICT	PLAN No.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Algoma.....	P-7105-1.....	151.....	Jan. 27/66	639	0.960
	P-7117-2.....	157.....	Jan. 27/66	639	7.620
	P-7134-3.....	1A.....	Jan. 13/66	639	2.600
	P-7185.....	150.....	Jan. 20/66	639	3.110
Brant.....	P-1833-41.....	S. Dumfries, Brantford.....	Dec. 16/65	5	1.041
	P-1833-42.....	S. Dumfries, Brantford.....	Jan. 6/66	99	3.950
	P-2207-24.....	Burford.....	Jan. 20/66	53	9.720
	P-2658-20.....	Burford, Blenheim.....	Jan. 20/66	2	9.280
	P-4053.....	Brantford.....	Jan. 6/66	24A	4.870
	P-5041-18.....	Brantford.....	Feb. 24/66	403	6.350
Bruce.....	P-4063.....	Village of Hepworth.....	June 3/65	70	
Cochrane.....	P-2692-25.....	Haggart.....	July 8/65	11	9.200
	P-7167.....	Tisdale.....	May 20/65	655	4.380
	P-7176.....	Matheson.....	Nov. 10/65	610	0.230
	P-7179.....	Bristol.....	Nov. 18/65	144	1.500
Dufferin.....	P-4040-7.....	Caledon, E. Garafraxa.....	Nov. 18/65	136	7.610
Elgin.....	P-1450-76.....	Southwold.....	Sept. 16/65	3	5.450
Frontenac.....	P-2071-69.....	Kingston.....	April 29/65	33	5.000
Grenville.....	P-2066-9.....	Bastard.....	Feb. 24/66	42	1.120
Grey.....	P-4063.....	Derby, Keppel.....	June 3/65 (see Bruce County)	70	9.000
Haliburton.....	P-2742-24.....	Minden.....	Jan. 27/66	121	9.370
Halton.....	P-3114-22.....	Trafalgar.....	Sept. 30/65	122	0.458
Hastings.....	P-1945-16.....	Marmora.....	Aug. 19/65	7TC	5.600
	P-1963-26.....	Hungerford and Huntingdon.....	Nov. 25/65	37	13.000
	P-2015-1.....	Elzevir.....	Nov. 4/65	37	1.200
	P-2773-28.....	Madoc.....	Feb. 17/66	62	0.089
Huron.....	P-1848-46.....	E. Wawanosh, Morris and Village of Blyth.....	June 30/65	4	12.000
	P-2090-39.....	Stanley and Village of Bayfield.....	Dec. 2/65	21	8.380
Kent.....	P-1975-67.....	Dover and Chatham.....	Jan. 27/66	40	3.640
	P-2942-15.....	Zone.....	Aug. 26/65	79	1.000
Leeds.....	P-2066-9.....	Bastard.....	(See Grenville County)		
Lennox and Addington.....	P-2069-76.....	Ernestown.....	Feb. 3/66	33	10.500
Manitoulin.....	P-3184-20.....	Rutherford.....	Mar. 17/66	637	0.320
Middlesex.....	P-2030-48.....	McGillivray and E. Williams.....	Dec. 9/65	7	10.680
Muskoka.....	P-2537-80.....	Monck.....	April 29/65	118	4.040
	P-7139-2.....	Medora.....	Aug. 26/65	118	0.870
	P-7160.....	Wood.....	April 29/65	660	5.150
	P-7161.....	Gibson I.R. 31.....	Mar. 26/65	660	6.150
Nipissing.....	P-2204-38.....	Cameron.....	July 18/65	17	11.760
	P-2724-32.....	MacPherson.....	Dec. 16/65	64	6.220

COUNTY OR DISTRICT	PLAN No.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Nipissing (Con't.)	P-2739-79	W. Ferris	June 3/65	17	2.880
	P-2785-101	Widdifield	Dec. 22/65	N.B. B.P.	1.750
	P-2823-10	Poitras	Feb. 24/66	63	7.120
	P-7077-21	Calvin	Sept. 30/65	630	7.250
	P-7166	Mattawan	April 8/65	656	2.600
Northumberland	P-1968-21	Murray	Sept. 16/65	33	3.450
Ontario	P-1601-35	Brock	Sept. 2/65	7 and 12	2.150
	P-1922-56	Pickering	May 20/65	2	9.900
Oxford	P-2081-36	E. Oxford, Blenheim, Blandford	Jan. 27/66	2	3.250
	P-2658-20	Burford, Blenheim	(See Brant County)		
Parry Sound	P-2624-3	Hardy, McConkey, Wilson	April 29/65	522	7.120
	P-2686-18	Strong	Jan. 13/66	124	2.360
	P-7162	Blair	April 1/65	522	3.680
	P-7163	McConkey	April 1/65	522	2.170
Peel	P-3106-5	Toronto	April 14/65	122	1.120
	P-4040-7	Caledon, E. Garafraxa	(See Dufferin County)		
Perth	P-1732-61	Wallace	July 27/65	23	12.260
Peterborough	P-1789-102	Otonabee	July 8/65	7TC	2.140
	P-1901-29	Asphodel	July 27/65	7TC	6.550
Prince Edward	P-2805-22	Hallowell, Sophiasburg	Nov. 4/65	49	3.680
Rainy River	P-2166-40	Rainy Lake Indian Reserves No. 26A and Sturgeon Falls			
		Indian Reserve No. 23	June 30/65	11	7.400
	P-2166-41	Rainy Lake Indian Reserves No. 16A and 18B	June 30/65	11	2.500
	P-3076-53	Unsurveyed	June 30/65	11	10.000
	P-3076-54	Unsurveyed	June 30/65	11	10.000
	P-3076-55	Unsurveyed	June 30/65	11	13.500
	P-3076-56	Unsurveyed	June 30/65	11	10.200
	P-3076-57	Unsurveyed	June 30/65	11	9.500
	P-3377-25	Watten and Rainy Lake	June 30/65	11	11.300
	P-8028-5	Halkirk	June 30/65	11	7.500
	P-8038-1	Farrington	June 24/65	11	4.400
Renfrew	P-2128-89	Rolph	Nov. 11/65	17	14.580
	P-6050	Lyndoch, Brudenell and Sebastopol	April 29/65	515	13.000
Simcoe	P-1973-22	Tecumseth, W. Gwillimbury	Oct. 21/65	27	1.960
Sudbury	P-2209-1	Shakespeare	Jan. 20/66	17	1.020
	P-2211-21	Baldwin	Oct. 28/65	17	6.330
	P-2580-3	Baldwin	Sept. 16/65	68	0.490
	P-7181	Antrim, Balfour, Baynes, Benne- weis, Cartier, Cascaden, Cham- pagne, Dowling, Dublin, Edin- burgh, Gouin, Hart, Hassard, Hazen, Inverness, Jack, Matta- gami, Marquette, Moncrieff, Muldrew, Noble, Paudash, Rayside, Roblin, St. Louis, Snider, Stetham, Ulster, and Westbrook	Nov. 18/65	144	122.000
Thunder Bay	P-3361-17	Unsurveyed	July 8/65	599	10.610
	P-8060-13	Unsurveyed	May 6/65	800	9.500
	P-8070-11	McIntyre	Feb. 3/66	Lakehead Expressway	1.000

COUNTY OR DISTRICT	PLAN No.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Timiskaming	P-2227-7	Hilliard	Dec. 16/65	11	1.320
	P-2232-18	Harley	Oct. 28/65	11	7.570
	P-2934-27	Harris	Jan. 27/66	65	5.760
	P-2957-29	Dymond	June 3/65	65	2.400
	P-2962-15	Gauthier	Oct. 14/65	66	6.890
	P-7180	Doyle, McKeown and Thornloe	Nov. 18/65	144	18.250
Waterloo	P-1417-72	Town of Preston and Waterloo	Feb. 10/66	8	2.380
	P-1791-92	Waterloo	July 27/65	7	2.190
Welland	P-2043-29	Thorold	April 8-65	58	0.530
	P-2043-43	Thorold	Aug. 26/65	58	0.750
	P-2043-46	Thorold	Nov. 4/65	58	2.450
Wellington	P-1732-61	Minto	(See Perth County)		
Wentworth	P-5070-1	Saltfleet	Nov. 18/65	Stoney Creek Expressway	1.280
York	P-2083-159	Etobicoke	Oct. 28/65	27	
	P-2937-59	North York	May 20/65	400 N.W. Ent.	

## APPENDIX No. 22

## Schedule of Reversions and Transfers of Sections of the King's Highway and Secondary Highway Systems for the Fiscal Year Ending March 31, 1966

COUNTY OR DISTRICT	PLAN No.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Algoma	P-2122-39	Town of Blind River	May 29/65	17TC	2.370
	P-8012-6	29, Range 23	April 14/66	101	0.780
Carleton	P-1590-35	N. Gower	Sept. 26/65	16	0.150
Durham	P-1656-33	Hope and Hamilton	June 19/65	2	1.370
Grenville	P-2026-53	Lansdowne	July 3/65	401	0.100
Halton	P-2070-151	Nelson	April 1/65	Q.E.W.	0.112
Hastings	P-2563-32	Thurlow	April 1/65	14	1.100
	P-2563-33	Thurlow	April 1/65	14	0.900
	P-6029-2	Village of Bancroft	May 29/65	62 and 500	0.700
Kent	P-1975-66	Wallaceburg	June 5/65	40	1.060
	P-2863-9	Town of Wallaceburg	May 29/65	78	0.500
	P-3252-18	Town of Blenheim	May 1/65	98	0.170
Lambton	P-2110-60	Village of Grand Bend	April 17/65	21	0.790
Leeds	P-1931-32	Leeds	April 1/65	15	0.720
	P-2026-53	Lansdowne	(See Grenville County)		
Lennox and Addington	P-2150-29	Denbigh	April 1/65	41	1.750
	P-3173-116	Ernestown	April 1/65	401	0.020
Manitoulin	P-2318-13	Carnarvon	July 3/65	542	0.280
	P-2607-24	Howland	May 29/65	540	0.360
Muskoka	P-2157-29	Wood	Aug. 26/65	69	0.200
	P-2537-83	Monck	July 24/65	118	0.030
	P-2725-11	Cardwell	Aug. 14/65	532	0.040
	P-3297-9	Macaulay	May 29/65	118	0.048



COUNTY OR DISTRICT	PLAN No.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILE
Northumberland	P-1512-13	Haldimand	July 30/65	2	0.89
Ontario	P-2549-7	Scugog	April 1/65	7A	0.14
	P-5061	Thorah	Oct. 30/65	48B	0.41
Oxford	P-2820-25	Village of Norwich	Sept. 18/65	59	0.87
Parry Sound	P-2153-55	McDougall	Sept. 11/65	69	0.27
	P-3237-8	Chapman	June 1/65	124	0.48
	P-3237-9	Chapman	Sept. 25/65	124	1.98
Peterborough	P-3352-6	Anstruther	May 8/65	620	0.09
Prince Edward	P-1489-30	Hallowell	Oct. 16/65	14	0.66
	P-2049-38	Hallowell	April 1/65	14 and 33	2.00
	P-2200-35	Hillier	April 1/65	33	1.67
Renfrew	P-1554-30	Town of Pembroke	May 29/65	17	0.57
	P-1832-12	Town of Arnprior	April 1/65	17	0.47
	P-2201-58	N. Algoma	July 3/65	60	0.11
Simcoe	P-1904-66	Town of Collingwood	May 14/65	26	0.45
	P-3057-17	Town of Stayner	Aug. 26/65	91	0.13
Sudbury	P-2132-45	Garson	April 1/65	541A	0.62
	P-2148-30	McKim	April 17/65	17	1.59
	P-2185-11	Falconbridge	April 1/65	541A	0.16
	P-2718-22	Rayside	April 1/65	544	0.15
	P-2976-74	McKim	July 3/65	69	2.03
	P-2982-19	Nairn	April 1/65	17	0.60
Timiskaming	P-7172	James	Oct. 16/65	560	0.16
Victoria	P-1946-33	Ops	April 1/65	7 and 35TC	0.07
	P-2527-56	Eldon	April 17/65	46	0.58
	P-3116-34	Ops	April 17/65	7 and 35TC	0.10
	P-5022-5	Digby	April 1/65	503	0.07
Waterloo	P-3092-137	Waterloo	Jan. 6/66	401	0.32
	P-3164-60	N. Dumfries	Aug. 26/65	401	0.04
	P-3164-61	N. Dumfries	Aug. 26/65	401	0.02
	P-3164-62	N. Dumfries	Aug. 26/65	401	0.02
York	P-2752-96	King	Sept. 25/65	400	0.27

## APPENDIX No. 23

**Schedule of Existing Roads Assumed as Portions of the King's Highway,  
Secondary Highway and Tertiary Road Systems for the  
Fiscal Year Ending March 31, 1966**

COUNTY OR DISTRICT	PLAN No.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MIL
Algoma	P-2263-6	Fenwick	Mar. 3/66	552	0.5
	P-2424-55	Tarentorus	—	17TC	2.9
	P-3362-4	Plummer additional (Town of Bruce Mines)	Feb. 10/66	561	0.7
	P-7016-10	Parke	—	565	2.6
Brant	P-2519-25	Brantford	Jan. 21/66	24	0.0
	P-4052-10	Oakland and Burford	June 11/65	24A	0.3
	P-4053-3	Brantford	May 18/65	24A	0.9
	P-4053-4	Brantford	Oct. 29/65	24A	4.7

COUNTY OR DISTRICT	PLAN No.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Prince George	P-4063	Village of Hepworth	May 3/65	70	0.200
Prochreane	P-7176 P-8102-4	Matheson Kennedy	Oct. 14/65 —	610 652	0.230 1.080
Prochreane	P-2390-36	Clarke	Oct. 7/65	35	0.060
Prochreane	P-2374-22	Yarmouth	Oct. 7/65	74	0.073
Prochreane	P-4051-8	Tilbury W.	June 28/65	77	0.029
Prochreane	P-1639-34	Kingston	Feb. 17/66	—	0.330
Prochreane	P-1671-39 P-4063	Town of Thornbury Derby, Keppel	Oct. 18/65 May 10/65	26 70	0.200 8.800
Prochreane	P-2773-28	Madoc	Jan. 21/66	62	0.089
Prochreane	P-2942-15 P-2942-22	Zone Zone	Aug. 9/65 Dec. 15/65	79 79	1.000 0.230
Prochreane	P-3184-20	Rutherford	Feb. 24/66	637	0.320
Prochreane	P-2456-37	Westminster	Dec. 15/65	74	0.164
Prochreane	P-1760	Wood	April 1/65	660	5.150
Prochreane	P-4052-10	Townsend and Windham	May 18/65	24A	0.370
Prochreane	P-1947-28	Hamilton	Dec. 1/65	2	0.143
Prochreane	P-1811-27	Whitby	Nov. 30/65	2	0.057
Prochreane	P-2624-3	Hardy, McConkey, Wilson	April 1/65	522	7.120
Prochreane	P-1732-60	Wallace	May 18/65	23	0.080
Prochreane	P-6050	Lyndoch, Brudenell and Sebastopol	April 1/65	515	13.000
Prochreane	P-3021-54	Orillia	June 28/65	11 and 12	0.090
Prochreane	P-8060-13 P-8070-5	Unsurveyed McIntyre	April 6/65 Aug. 19/65	800 Lakehead Expressway	9.500 1.500
Prochreane	P-1910-24 P-2043-42 P-2511-55	Pelham Thorold Bertie	July 26/65 Aug. 12/65 Dec. 3/65	20 58 Q.E.W.	0.209 0.750 0.110
Prochreane	P-1732-60	Minto and Maryborough	May 11/65	23	
Prochreane	P-3070-40 P-3070-41	Ancaster Ancaster	Nov. 19/65 Dec. 30/65	403 403	0.232 0.038
Prochreane	P-2083-157 P-2770-603 P-5072	Etobicoke North York E. Gwillimbury, King	July 23/65 July 23/65 July 23/65	27 401 9	0.168 0.130 5.920

## CHRONOLOGY—DEPARTMENT OF HIGHWAYS

1965

- January 11—Prime Minister Robarts announced that Highway 401 will be named the "Macdonald-Cartier Freeway."
- March 11—Local Road Boards established in Northern Ontario.
- May 3—Department of Highways estimates for 1965-66 presented to Legislature by Hon. Charles S. MacNaughton.
- June 28—Highway 11 between Atikokan and Fort Frances, including the "Noden Causeway" over Rainy Lake, was officially opened.
- July 9—A two-mile section of Highway 403 from a point south of the Desjardins Canal (Hamilton) westerly to Aberdeen Avenue opened for traffic.
- July 26—Two-way radio systems in operation in Sault Ste. Marie, Fort William and Kenora district completing the department's program for establishing two-way radio systems in all D. H. O. districts.
- August 16—The south lanes of Highway 401 from Kent County Road easterly to the Kent-Elgin County line were opened for traffic, completing the four lanes of Highway 401 through southwestern Ontario.
- August 24—The Atherly Narrows Bridge on Trans-Canada Highway 12 was officially opened.
- September 8—A \$14-million contract was awarded for the construction of the Thorold Tunnel under the Welland Canal.
- October 29—First contract awarded for the Kitchener-Waterloo Expressway.
- November 26—The Ottawa Queensway from O'Connor Street easterly to Concorde Avenue was opened for traffic.
- December 7—Highway 406 from St. Davids Road to Westchester Avenue (St. Catharines) was opened for traffic.
- December 16—The new 12-lane Macdonald-Cartier Freeway (Highway 401) from Highway 400 to Hoggs Hollow (just east of Avenue Road—Toronto) a distance of six miles, was opened for traffic.

## ORGANIZATION CHART

Reviewed by A.T.C. McKee, Deputy Minister      Published by J.Paula, Director of Research

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# ANNUAL REPORT

for the fiscal year ending  
March 31st

1967



Department of Highways

ONTARIO



# ANNUAL REPORT

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for the fiscal year ending  
March 31st

**1967**

Department of Highways

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ONTARIO





TO THE HONOURABLE W. EARL ROWE,  
*Lieutenant-Governor of the Province of Ontario.*

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to submit the Annual Report of the Department of Highways, Ontario, for the fiscal year ending March 31, 1967.

Respectfully submitted,  
GEORGE E. GOMME,  
*Minister of Highways.*

Parliament Buildings,  
Toronto, Ontario,  
December 3, 1967.



TO THE HONOURABLE GEORGE E. GOMME,  
*Minister of Highways, Ontario.*

Sir:

I have the honour to present the report of the activities of the Department of Highways for the fiscal year ending March 31, 1967.

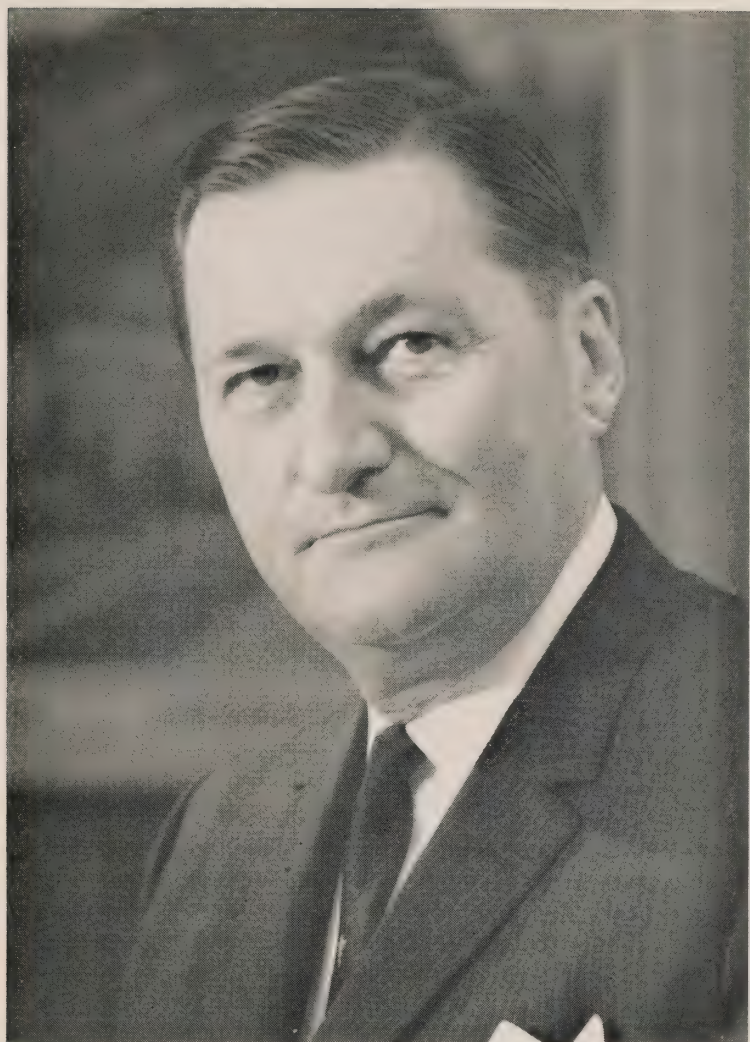
The report covers the operations of the ten Branches and includes special reports on the Trans-Canada Highway and the Mining, Access and Resources Roads.

Respectfully submitted,  
A. T. C. McNAB,  
*Deputy Minister.*

Downsview, Ontario,  
December 1, 1967.

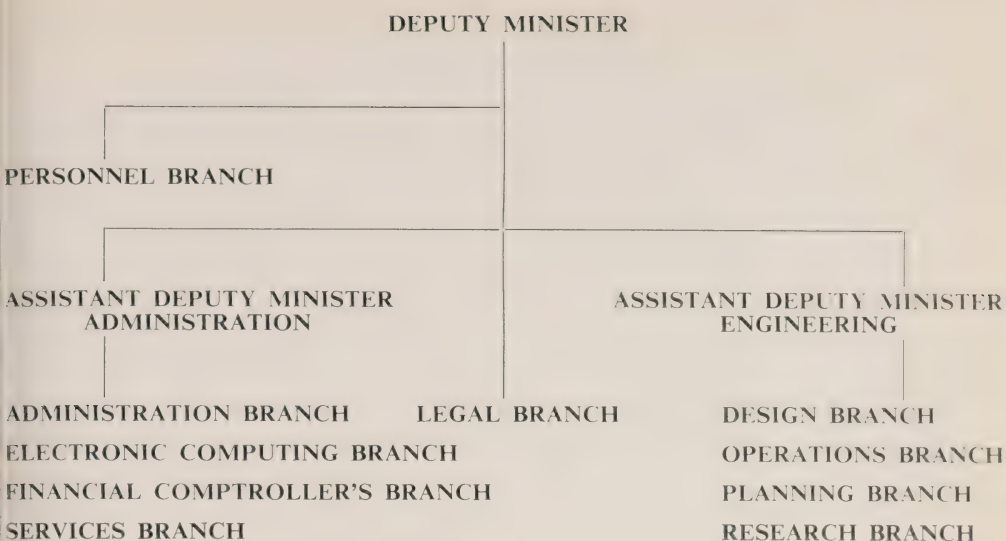






Honourable George E. Gomme  
Minister of Highways, Ontario





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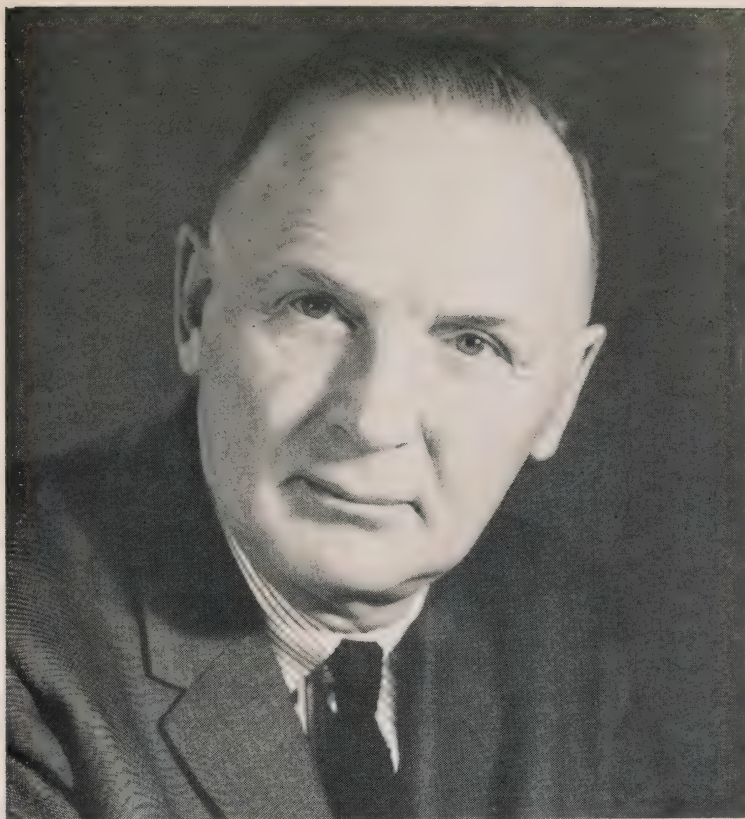
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**A. T. C. McNab**  
**Deputy Minister, Department of Highways, Ontario**

## **SUMMARY OF THE REPORT**

With a net budget of \$390,567,000 for the current fiscal year, substantial improvements and expansion of the total roads network of the province were carried out in all parts of Ontario. The total network comprises the roads and streets for which the municipalities are responsible as well as the King's Highway system.

In the \$390,567,000 budget, \$168,485,000 was provided for construction and \$72,135,000 for maintenance, of King's Highway mileage. The figure of \$149,947,000 was budgeted for assistance to the municipalities—mainly in the form of road and street subsidies.

Another significant item was the provision of \$9,607,000 to cover implementation of the initial phase of the government's rail commuter project, known as "Go Transit", which will be operated by the Department of Highways.

In Southern Ontario work was in evidence on many of the routes of major interest, particularly the "400" series of freeways and the Queen Elizabeth Way.

On the Macdonald-Cartier Freeway (Highway 401), highlights were the continuing good progress being made on the reconstruction of sections of the Toronto By-Pass

to 12 lanes and the construction of a new 25-mile four-lane section in Eastern Ontario to replace the existing mileage along the St. Lawrence River between Gananoque and Long Beach, some five miles west of Brockville.

On the Toronto By-Pass route, construction has been under way in 1966 on two sections, one from Islington Avenue easterly to Highway 400 and the other a six-mile stretch from Hogg's Hollow to Warden Avenue, scheduled for completion by the fall of 1968.

On the entirely new section of the Macdonald-Cartier Freeway being construction as a four-lane unit on a new alignment north of the present route between Gananoque and Brockville, the work is right on schedule. All contracts for grading of the 25 miles of the new route had been awarded by the year's end and a contract for paving of the first 11½ miles easterly from Gananoque has also been awarded.

Farther east, the paving of the north lanes (westbound) over the 16 miles from Iroquois easterly to the Aultsville Sideroad was in progress, the work being at an advanced stage as far as the interchange for Highway 31 when the contractor was forced to shut down because of poor weather. Apart from the new Gananoque-to-Brockville link, this is the only mileage east of Toronto which as yet does not have four lanes.

In Southwestern Ontario, where all four lanes of the Macdonald-Cartier Freeway have been in service since 1965, the emphasis was on increasing the safety factor through greater control of access, achieved by the construction of additional overpasses and interchanges for intersecting roads.

In October, the extension of Highway 400 southerly from Highway 401 to Jane Street (Metropolitan Toronto) was officially opened for traffic. This \$2-million improvement affords traffic from the western part of Metropolitan Toronto direct access to resort areas to the north via Highway 400 as well as providing access to Highway 401 via the Highway 400 Interchange.

On another of the "400" series of freeways, the Brantford By-Pass section of Highway 403 was officially opened late in October. The new 6¾-mile long four-lane, controlled-access expressway extends from Highway 2, near Cainsville—beyond the eastern limits of Brantford—to just west of the city's western limits, where it connects again with Highway 2.

In the department's program to widen the Queen Elizabeth Way to six lanes between Toronto and Hamilton the reconstruction of five-and-a-half miles from Mississauga Road westerly was completed during the year.

Within the western limits of Metropolitan Toronto a contract was awarded for the construction of a one-mile detour route and the construction of retaining walls from Kipling Avenue westerly. This is the initial contract in a program to widen the Queen Elizabeth Way to 10 lanes through the area and is preparatory to the construction of a new interchange for the Queen Elizabeth Way and Highway 27.

The final link on the 10-mile Ottawa-Queensway, between Concord Street and Hurdman's Bridge, was opened to traffic in October. With the completion of this project Ottawa became the first major city in Canada to have a controlled-access highway running from one end of the city to the other through the downtown core of the city.

The first major contract in the construction of the Kitchener-Waterloo Expressway

was awarded in February. The contract covers the reconstruction of a two-mile section of King Street in Kitchener and work on this project is proceeding ahead of schedule. Under the department's program of assisting heavily-populated areas with the construction of high-speed, high-capacity expressways to link with the King's Highway system in the area projects of this nature are subsidized at the rate of 75 per cent, beginning with property acquisition, and continuing on through the construction stages and finally, maintenance.

The 12½ miles of the Beaverton By-Pass route was opened to traffic in November. The new highway provides a through route for traffic on Highway 48 and Trans-Canada Highway 12, through this famous resort area.

The reconstruction of Highway 11 north of Orillia to a four-lane facility is proceeding on schedule. By the end of 1965 this widening had proceeded northerly to Severn Bridge and during the past year the construction of a new bridge over the Severn River has been under way, along with the widening of an additional four-and-a-half miles of Highway 11 northerly from Severn Bridge. This latter project was completed in October.

During the year the steel work for the new Quinte Skyway was completed and a contract for the paving of the bridge was awarded in July.

In April, 18 miles of a Hastings County road between Madoc and Foxboro, north of Belleville, was assumed to become part of King's Highway 62. The purpose was to link Madoc and Belleville via a King's Highway route that is noticeably shorter than any other combination of such routes formerly available.

Considerable work has been under way during the past year on the new Sudbury to Timmins road, King's Highway 144. Grading contracts covering 62 miles of the new road had been awarded by the end of the year. Construction of the road is being done from both ends and a 48-mile section southerly from Highway 101 is in progress as well as a 14-mile stretch northerly from Benny.

A new Northern Ontario highway, Tertiary Road No. 807, running northerly from Smooth Rock Falls on Highway 11, west of Cochrane, to Fraserdale in the James Bay Watershed, was officially opened in July. The new road provides motor vehicles access to remote installations of Ontario Hydro on the Abitibi and Mattagami Rivers.

The opening of a new 80-mile section of Highway 101 between Chapleau and Wawa in November provides a link across the northern part of the province joining the Lake Superior Route of the Trans-Canada Highway with the Northern Ontario Route (Highway 11).

During the year it was announced that the program to reconstruct Secondary Highway 614, from Trans-Canada Highway 17 northerly to the mining community of Manitouwadge had been accelerated. The reconstruction of the first nine miles southerly from Manitouwadge was completed before the end of the year and a contract for grading an additional nine-and-a-half miles is scheduled to be awarded early in 1967.

At the Lakehead cities of Port Arthur-Fort William the first contract in the construction of the Lakehead Expressway covering a section of Golf Links Road, which will become part of the Expressway in its initial stage, was completed during the year. The Lakehead Expressway is being built under the department's Urban Expressway program and is designed to provide an alternate through-route for Trans-Canada Highway traffic as well as providing an expressway route for inter-city traffic.



By the end of 1966 all contracts for the reconstruction and paving of Highway 105 from Trans-Canada Highway 17 to Red Lake had been awarded. Completion of the 16 miles of paving northerly from Highway 17 is scheduled for the summer of 1967, at which time, this 110 miles of highway, leading to one of Ontario's richest gold-mining districts, will be paved over its entire distance.

On another King's Highway of major importance in Northwestern Ontario, Highway 71, grading was completed this September on a section that has been reconstructed from Nestor Falls southerly for nine miles, at which time a contract for paving of this mileage was awarded. This work is part of an accelerated program to reconstruct Highway 71 over its full north-south route between the Minnesota border and its junction with Trans-Canada Highway 17, east of Kenora.

Also in Northwestern Ontario work was in progress in extending still farther north the most northerly highway mileage within the King's Highway system, namely Highway 599. At a location considerably more than 100 road miles north of Savant Lake—a point on the CNR transcontinental line—work was going forward. In November a contract was awarded for the construction of a bridge over the Otonosquin River.

On the main route of the Trans-Canada Highway reconstruction and new construction was under way in 1966 over a total distance of some 41 miles at various points. Among some of the projects completed during the year were: the Beaverton By-Pass, a six-mile section of Highway 69 between Gordon Bay and Hayes Corners, 12 miles in the vicinity of English River, west of the Lakehead, and seven miles in the Kenora-Keewatin area.

## CONTRACTS COMPLETED

During 1966-67 Capital construction contracts were completed on 410 miles of grading, 417 miles of hot mix paving, 34 miles of concrete paving and 76 structures with 373 capital contracts being completed along with 147 maintenance contracts.

In the fiscal year 1966-67, 286 capital construction contracts and 149 maintenance contracts were awarded and this new capital work covered 151 miles of grading, 191 miles of hot mix paving, 316 miles of grading and hot mix paving and 69 structures of various types.

	FISCAL YEAR ENDING	
	MARCH 31, 1967	MARCH 31, 1966
From capital payments on construction of King's Highways and Secondary Highways.....	\$173,910,400	\$151,820,114
Less: <i>Recoveries on</i>		
(1) Trans-Canada Highway		
(2) Ottawa-Queensway		
(3) Railway Bridges		
(4) City of Ottawa.....	5,424,979	5,575,712
Net capital payments on construction of King's Highways and Secondary Highways.....	\$168,485,421	\$146,244,402
Ordinary expenditures on King's Highways and Secondary Highways including maintenance and general operating expenses.....	\$ 72,135,232	\$ 58,683,894
Provincial subsidies on municipal roads and streets, development roads in unincorporated townships and connecting links.....	\$149,946,941	\$131,218,510
TOTAL NET EXPENDITURES.....	\$390,567,594	\$336,146,806

## Assistant Deputy Minister (Engineering)

H. W. Adcock, P. Eng.

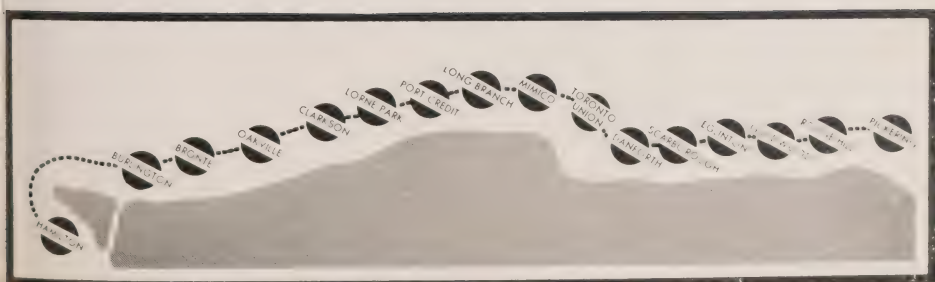
### COMMUTER RAIL DIVISION

W. T. Howard—Manager

In June, 1966, the Commuter Rail Division was established to administer the development and operation of GO (Government of Ontario) Transit. In the same month, at Rouge Hill in Pickering Township, the Honourable C. S. MacNaughton turned the first sod to begin construction of the first of twelve stations, located along the lakeshore, on the Canadian National Railways main line between Pickering and Oakville. This construction included the building of parking lots and access roads, erecting station buildings and passenger shelters, and security fencing. At the same time Canadian National Railways' contractors commenced work on the construction of underpasses and platforms, and alterations to track and signals necessary to accommodate the commuter service.

In November, 1966, the first of the specially designed rolling stock came off the assembly line, and by March 31, 1967, delivery had been taken of eight 3,000 horsepower diesel locomotives and ten commuter coaches. Still on the assembly line were thirty commuter coaches and nine self-propelled cars.

May 23rd, 1967 was established as the target date for the inauguration of the service.





The layout of a typical GO Transit station is shown in this aerial photo. The Rouge Hill station, located in Pickering Township 16 miles east of Toronto, served as the prototype for 10 other GO stations that were built at an average cost of \$160,000. The 124 car parking area is shown to right of ticketing office and platform entrances. A portion of the platforms is seen in the upper left corner.

GO TRANSIT PHOTO





GO Transit's green and white station structures consist of ticketing office, foreground, platform tunnel superstructures and platform shelters. All units are constructed from pre-fabricated aluminum and glass panels to give flexibility in the size of structures for various locations.

GO TRANSIT PHOTO



## ADMINISTRATION BRANCH

### ENGINEERING AUDIT SECTION

**D. M. Hopper Superintendent**

The Engineering Audit Section is broken down into two main groups. Field Audit and Contract Checking.

#### FIELD AUDIT GROUP

This group, under the direction of the Field Audit Supervisor, consists of an estimating group, which is located at Downsview, and Field Staff, which are established on a regional basis in five different regions throughout the province. Each region is set up with one Regional Supervisor, one Assistant Supervisor, one Field Party Supervisor, two Field Parties, a Weigh Inspector, and an Office Draftsman. This staff conducts routine spot checks by survey and by examination of records on all pre-engineering projects and construction contracts in the various districts. These audits are performed on all Capital, Maintenance, Development Road, Connecting Link contracts and on occasion By-Law subsidy work. In addition to these routine audits pre-contract and post-contract meetings are attended, and reviews of all claims are made. Following the spot checks and reviews, reports are forwarded to the various district engineers and other persons concerned, under covering letter of the Superintendent of Engineering Audit.

The estimating group have a number of functions which includes spot checking various pre-engineering estimates to ensure that they adhere to normal estimating procedures, as established by the Road Design Division, and checking at random, final estimates which have been processed by the Contract Checking Group. Other reports compiled by this group include some contractors' claims, at the request of the Claims Engineer.

During the fiscal year of 1966-67, 432 field audits were performed, and 406 office audits. In addition, a considerable number of final estimates were checked and approved at the Regional Offices during the winter of 1966-67.

#### CONTRACT CHECKING GROUP

This group, under the direction of the Contract Checking Supervisor, is divided into four checking groups, and one "As Constructed Plans and Profiles" Drafting Group. The prime function of the Checking Group is the approval of all payment quantities subject to the payment limitations outlined under the contract tenders. Upon completion of the final review by the Contract Checking Group, a report is prepared, embodying the approved final payment quantities for the direction of the District Engineer and head office. These reports are made on all capital, maintenance, development road, and some connecting link contracts. In addition to the verifying final payment quantities, these reports also outline deficiencies in the records and the methods of payment, and are instrumental in improving the standard of records and payments on subsequent contract. Unusual problems requiring special consideration are referred to the Director of Operations for clarification. By the use of these procedures, departmental decisions are consistent, and uniform treatment is given in all cases. The Drafting Group is responsible for the preparation of plans and profiles, showing the latest "As Constructed" data, which is derived from the construction records. These records

have proven their value in the settling of contractors' claims and for the re-design of existing roads.

For the fiscal year 1966-67, the following table lists by districts, the number of contracts checked, with their total monetary value.

DISTRICT	CONSTRUCTION		MAINTENANCE		INVITATION BID		DEV. ROADS & CONN. LINKS
	NO.	\$ VALUE	NO.	\$ VALUE	NO.	\$ VALUE	
Chatham.....	18	4,486,841	8	256,306	5	29,502	1
London.....	11	1,408,941	8	342,182	1	5,157	2
Stratford.....	5	429,233	9	402,275	2	14,585	11
Hamilton.....	26	9,328,617	20	1,173,239	3	199,435	3
Owen Sound.....	14	2,170,931	12	525,042	—	—	10
Toronto.....	19	23,606,974	18	1,258,295	9	99,155	2
Port Hope.....	16	3,198,399	9	288,077	2	4,271	17
Kingston.....	12	2,074,204	10	280,661	1	14,315	22
Ottawa.....	27	7,727,386	10	446,011	—	—	12
Bancroft.....	11	1,785,830	8	215,942	—	—	4
Huntsville.....	14	3,370,603	8	646,862	—	—	—
North Bay.....	20	3,315,690	5	275,214	—	—	2
New Liskeard.....	16	1,883,862	5	191,247	—	—	—
Cochrane.....	11	2,736,542	6	289,295	1	7,429	—
Sudbury.....	16	4,225,407	10	230,162	—	—	—
Sault Ste. Marie.....	19	3,473,920	6	168,973	1	29,474	2
Fort William.....	5	1,869,216	4	148,712	—	—	—
Kenora.....	12	3,797,540	—	—	—	—	—
TOTALS	272	80,890,136	156	7,138,495	25	403,323	88

As in previous years there is a considerable exchange of staff between the Contract Checking Group and the Regions. During the construction season additional staff was put in the field from head office and during the winter season the Contract Checking Group is augmented by staff from the Regions.

## INFORMATION SECTION

Robert G. Baigent, Information Officer

The Information Section is responsible for the collection and issuance of general information regarding department activities and for the printing and distribution of the Official Ontario Road Bulletin (issued every two weeks, May to October), the Annual Report and the employee's magazine, DHO News.

Distribution by the section during the fiscal year also included the initial mailings of the Capital Construction and Municipal programs, the Official Road Map of Ontario, the Macdonald-Cartier Freeway Map (Highway 401 strip map), the Roads to Recreation pamphlet, Northern Ontario Road Map and special reports.

To provide the public with general information, numerous press releases, fact sheets and illustrations were sent to all Ontario newspapers, radio and TV stations. Special material was prepared, for feature articles, in the trade press and for officials of other highway and technical organizations.

Further new and replacement public service film clips on safety were distributed to all TV stations, including United States border stations where channels are directed to Ontario viewers. Similar safety spot announcements were also prepared and sent to all radio stations in the province.

The department's first 60 second TV spot in colour won the Public Service Division

trophy at The Annual International Broadcasting Awards sponsored by The Hollywood Radio and Television Society and The Gold Centennial Award at The TV Commercials Festival.

#### FILMS

Skyway to the Future  
White Fallout  
Highway Housekeeping  
Roads to Recreation  
Carnival Country  
Roads to Prosperity  
TV Public Service Clips

#### PUBLICATIONS

Official Road Map  
Northern Ontario Road Map  
Roads to Recreation Road Map  
Macdonald-Cartier Freeway Map  
Road Bulletin  
Annual Report  
DHO News

## DESIGN BRANCH

John Walter, P.Eng., Director of Design

## CARTOGRAPHIC SECTION

C. G. Gould, Supervisor

New bases were completed for the lithographing of maps of the counties of Prince Edward, Frontenac, Lennox and Addington at a scale of 4 miles to 1 inch.

During the year bases at a scale of 4 miles to 1 inch were revised and maps printed of the counties of Carleton, Lanark, Leeds and Grenville, Haldimand, Halton, Lincoln, Peel, Welland, Wentworth and York.

A new base was completed of Hastings County at a scale of 4 miles to 1 inch.

New bases were completed for the maps of the following northern districts at a scale of 2 miles to 1 inch:

- (a) Nipissing (North Lower Portion).
- (b) Sudbury (North West Portion).
- (c) Sudbury (North East Portion).
- (d) Sudbury (Middle West Portion).
- (e) Sudbury (Middle East Portion).
- (f) Sudbury (South West Portion).
- (g) Sudbury (South East Portion).
- (h) Timiskaming (West Portion).
- (i) Timiskaming (East Portion).

Preparation of new bases for maps of the following northern districts were commenced:

- (a) Algoma (North Eastern Portion).
- (b) Algoma (North Western Portion).
- (c) Manitoulin Island.

The 1967 Road Map bases were revised to show all revisions in preparation for the Printer. Work was commenced on a new process in which we supply the Printer with clear film transparencies, showing all type matter, in order to cut correction cost. All printed matter was proof read, and stages of the printing was checked.

The Macdonald-Cartier Freeway Strip Map booklet was revised and two new bases of the Montreal area for Expo 67 was included.

The highways, pavements and numbers were checked for a new printing of the special map of Northern Ontario.

The base for Roads to Recreation Map was revised and brought up-to-date.

Cronaflexes were revised of county and district maps for new highways, new county roads and municipal limits at a scale of 1 mile to 1 inch and 2 miles to 1 inch.

The leading map agencies in Canada and the United States were supplied with information in order to bring their road maps of Ontario up-to-date.

The maps of Southern and Northern Ontario at a scale of 8 miles to 1 inch and all the tracings of the districts which are used as patrol maps were revised and brought up-to-date.



Work was done on the following miscellaneous jobs:

- (1) Checking county road by-laws for assumptions and reversions.
- (2) Reviewing subdivision plans.
- (3) Revising wall maps.
- (4) Revising Organization Charts.
- (5) Preparation of map information for other departments.

## ROAD DESIGN DIVISION

**D. W. Farren, P.Eng., Road Design Engineer**

During the fiscal year, the Road Design Division completed the design drawings and contract documents and prepared quantity and cost estimates for 289 contracts covering approximately 900 miles of highway construction and reconstruction, which can be summarized as follows:

Grading and Drainage.....	24 miles
Grading, Drainage & Granular Base.....	149 miles
Grading, Drainage, Granular Base and Hot Mix Paving.....	299 miles
Grading, Drainage, Granular Base and Concrete Paving.....	32 miles
Asphalt Resurfacing.....	196 miles
Hot Mix Paving.....	181 miles

In addition to those summarized above, designs were completed and contract documents, drawings and estimates prepared for 61 structure and approach contracts and 53 \*miscellaneous contracts.

Some of the major undertakings included in the above are:

1. The design of the Q.E.W. and Highway 27 Interchange and the widening of the Q.E.W. from Highway 27 to the Royal York Road.
2. The design of the Macdonald-Cartier Freeway from Kipling Avenue to Highway 27.
3. The installation of anti-glare screens on the Q.E.W.
4. Over 50% of the detail design for the Kitchener-Waterloo Expressway was completed. In addition to the detail design, numerous investigations were carried out relative to drainage, utility work, property, construction staging and scheduling of city projects.
5. 8 projects for the Lakehead Expressway were designed.

\* Included under miscellaneous contracts are those for highway illumination, overhead sign supports, patrol yards, clearing and grubbing, chain link security fences etc.

The Road Design Division is divided into six sectors, viz. Central, Eastern, South West, Northern, and North-West Regions, and Head Office.

### CENTRAL REGION

**C. K. Hunter, P.Eng., Regional Road Design Engineer**

This region is responsible for all road design projects in the Toronto, Hamilton and Port Hope Districts. 74 projects were designed during this fiscal year as follows:

Grading, drainage, granular base and hot mix paving.....	109.5 miles
Grading, drainage, granular base and concrete paving, illumination and structures .....	25.7 miles

Asphalt resurfacing.....	56.2 miles
Grading, drainage and granular base.....	2.1 miles
Clearing, grubbing and fencing.....	32.0 miles
Structure and approaches.....	9 projects
Steel beam guide rail.....	3 projects
Tunnel construction and associated work.....	1 project
Miscellaneous.....	10 projects

## EASTERN REGION

## S. J. Markiewicz, P.Eng., Regional Road Design Engineer

This region is responsible for road design projects in the Kingston, Ottawa and Bancroft Districts. 52 projects were designed during this fiscal year as follows:

Grading and drainage.....	8.1 miles
Grading, drainage and granular base.....	7.8 miles
Grading, drainage, granular base and hot mix paving.....	14.2 miles
Asphalt resurfacing.....	7.3 miles
Hot mix paving.....	41.5 miles
Structure and approaches.....	14 projects
Interchanges including structures and approaches.....	4 projects
Miscellaneous.....	6 projects

## SOUTH-WEST REGION

## A. Gater, P.Eng., Regional Road Design Engineer

This region is responsible for road design work in the London, Chatham, Stratford and Owen Sound Districts. A total of 61 projects were designed during the fiscal year as follows:

Grading, drainage and granular base.....	6.7 miles
Grading, drainage, granular base and hot mix paving.....	58.5 miles
Grading, drainage, granular base and concrete paving.....	6.2 miles
Hot mix paving.....	26.6 miles
Asphalt resurfacing.....	65.6 miles
Structure and approaches.....	24 projects
Miscellaneous.....	11 projects

## NORTHERN REGION

## H. McArthur, P.Eng., Regional Road Design Engineer

The Northern Region is responsible for road design work in the Huntsville, North Bay, New Liskeard, most of Sault Ste. Marie, and Sudbury Districts. 77 projects were designed during the fiscal year as follows:

Grading, drainage, granular base and hot mix paving.....	64.1 miles
Grading, drainage and granular base.....	122.5 miles
Asphalt resurfacing.....	58.0 miles
Hot mix paving.....	49.4 miles
Structure and approaches.....	6 projects
Miscellaneous.....	11 projects

## NORTH-WEST REGION

### H. W. Hurrell, Regional Road Design Engineer

This region is responsible for road design work in the Kenora, Fort William, Cochrane and part of Sault Ste. Marie Districts. 25 projects were designed during the fiscal year as follows:

Grading and drainage.....	15.5 miles
Grading, drainage and granular base.....	9.5 miles
Grading, drainage, granular base and hot mix paving.....	52.4 miles
Hot mix paving.....	62.3 miles
Asphalt resurfacing.....	8.7 miles
Structure and approaches.....	4 projects
Miscellaneous.....	4 projects

## HEAD OFFICE

### J. Ford, P.Eng., Special Projects Design Engineer

Road Design Head Office is responsible for the operations which are considered to be best handled from a centralized location.

#### THE DESIGN SERVICES ENGINEER'S SECTION

*Intersection Detail Design Group*—is responsible for the detail design of horizontal and vertical alignment of all interchanges and channelized intersections and the production of intersection detail plans for incorporation into road design contract documents. In the past year, 11 interchanges and 53 channelizations were processed and completed. In addition, the group has reviewed all interchanges and channelizations designed by Consultants.

*Geometric Design Group*—is responsible for the establishment of geometric alignment for projects designed on the basis of photogrammetric mapping and geodetic co-ordinate control. This design approach is presently being applied to all projects in the urban freeway category. During this year, the group supplied complete geometric data for three projects.

#### THE HEAD OFFICE PROJECT DESIGN ENGINEER'S SECTION

*Project Review Group*—is responsible for reviewing all projects submitted from the Regions for accuracy and conformity to current policies. During this year, this group scrutinized 260 projects representing approximately 900 miles of highway construction.

*Highway Standards Group*—is under the direction of the Highway Standards Engineer and is responsible for the preparation of all Department standards for inclusion in projects.

*Manuals and Procedures Engineer*—is responsible for all Road Design Division manuals, particularly keeping our Estimating Manuals abreast of technical advances and procedural changes in road design technology.

*Training Officer Position*—was established to administer the training program for promotional purposes for Road Design employees. In addition, he administers an on-the-job training program for new employees and refresher courses for senior employees.

*Design Studies Engineer*—is responsible for liaison with our Electronic Computing Branch and also for conducting special studies on subjects that arise. In this year, several routine studies were carried out and the road design computer programs were

extended to incorporate technical and procedural changes in road design technology.

### SPECIAL STUDIES CARRIED OUT

In the past year, progress was made on the preparation of

- A "Manual of Design for Highway Illumination Systems", and,
- Research in conjunction with the O.W.R.C. was carried out on the capacity of catch basin inlets.

### BRIDGE DIVISION

**B. R. Davis, P.Eng., Bridge Engineer**

The work of the Bridge Division is subdivided into Bridge Planning Section, Bridge Design Section, Bridge Control Section and Municipal Bridge Liaison Section. The work carried out within each section is described as follows:

#### BRIDGE PLANNING SECTION

**S. McCombie, P.Eng., Bridge Planning Engineer**

In June, 1964 a Regional Office was opened in Fort William to provide bridge planning services in the North West Region. In June, 1966 similar offices were opened in North Bay, Kingston and London to provide these services in the Northern, Eastern and South Western Regions. The Central Region office is to remain with Head Office until facilities are available within the Central Region quarters.

The Regional Offices are staffed as follows:

North West Region, Fort William	F. DeVisser, P.Eng., Regional Bridge Location Engineer.
Northern Region, North Bay	J. B. Curtis, P.Eng., Regional Bridge Location Engineer.
Eastern Region, Kingston	G. Scott, P.Eng., Regional Bridge Location Engineer.
South Western Region, London	A. Watt, P.Eng., Regional Bridge Location Engineer.
Central Region, Downsview	W. Melinyshyn, P.Eng., Regional Bridge Location Engineer.

The work in the Hydrology Sub-Section continued to increase with 283 jobs being investigated on King's Highways and Municipal Roads.

A start was made on the use of the computer for hydrologic calculations.

Data was collected on scour at existing bridges and a project started as part of the program of The Canadian Good Roads Association to determine the best method of designing for this condition. For this purpose an Echo Sounder was purchased. It is anticipated that the study will require at least five years before a report can be prepared.

Guidance and direction were provided for a research project being carried out by the University of Windsor in the hydrology field.



## BRIDGE DESIGN SECTION

C. Grebski, P.Eng., Bridge Design Engineer

During the past fiscal year the Bridge Design Section was responsible for the completion of 98 bridge designs. Of this number, 26 designs were prepared by consultants and 72 by Department staff.

The types of bridges designed are as follows:

Prestressed Precast Beam.....	43
Post-tensioned Poured-in-place.....	25
Structural Steel.....	12
Reinforced Concrete.....	13
Timber.....	2
Revisions to Existing Structure.....	3

Plans were also prepared for 285 standard culverts, 9 special design culverts and 52 retaining walls.

Design work was completed on the bridges at the Highway 27/Q.E.W. complex. These structures are of the latest type design, incorporating post-tensioned concrete decks with curved soffits to give an aesthetically pleasing appearance. Work was also started on the bridges at the proposed Highway 27/401 Interchange.

Preliminary design work was started for the proposed crossings on the new Welland Canal Diversion at Welland Ontario.

The design was completed for a new bridge over the Grand River at Paris. This is a major structure utilizing a composite structural steel deck system with five spans and an overall length of 1,200 feet.

Work progressed on the design of bridges on the Kitchener-Waterloo Expressway. Two structures were completed and work was begun on 9 others.

Of particular interest is the subway design to carry eight tracks of the T.H.&B. Railway over Highway 403 in the vicinity of Hamilton, District 4. This structure has two spans of approximately 74 feet and is about 114 feet wide. The deck consists of pretensioned concrete boxes placed side by side, with a cast-in-place concrete slab acting compositely with the boxes. Cost estimates indicated considerable saving over more conventional types of deck design as less deck thickness was required. This is the first application in Ontario of prestressed precast concrete members used for a bridge carrying railway traffic.

In the electronic computing field six new programs were developed in conjunction with the Electronic Computing Branch. The most significant of these was a design analysis program for curved post-tensioned concrete bridges.

During the past year Department staff received an Award of Excellence for their design of the Seine River Bridge near Atikokan, Ontario. This award is given bi-annually and honours Canadian architects and engineers for their creative use of structural steel in the design of buildings and bridges. It is sponsored by The National Design Council and the Department of Industry, in association with The Canadian Steel Industries Construction Council.

**BRIDGE CONTROL SECTION**

**A. E. McKim, P.Eng., Bridge Control Engineer**

The Bridge Contract Engineer prepared 120 D4 Estimates and Special Provisions for structure contracts for a total estimated value of \$26,023,976.61.

The Materials Control Office prepared 752 purchasing requisitions for materials to be supplied by the Department with a value of \$3,452,000.00. These requisitions covered a wide variety of materials including 8,000 tons of reinforcing steel, 64,278 lineal feet of piling and 43,900 lineal feet of bridge hand-railing. Arrangements were also made to have these materials inspected by private companies specializing in this work.

Repeating a practice initiated a year ago, the Quantities Unit utilized staff in several districts during the winter months to calculate quantities. Quantities for 22 structures and 15 retaining walls were calculated in this manner.

Technicians of the Control Section provided quality control inspection on all precast prestressed beams manufactured for the Department as well as those for a large number of municipal contracts. Engineers of the Section continued their co-operation with the District field staff on all phases of bridge construction and particularly in the checking and inspection of falsework.

During the year, shop drawings were reviewed for 22 structural steel contracts, totalling 25 bridges. Ten of these contracts were carried over from the previous year. A total of 4,718 tons of structural steel was erected during this period.

In addition, arrangements were made for both shop and field inspection (by private companies) for this material.

**MUNICIPAL BRIDGE SECTION**

**K. L. Kleinsteinber, P.Eng., Municipal Bridge Liaison Engineer**

As compared with the last few years, there was a slight reduction in the number of projects submitted for review.

The approvals were as follows:

Preliminary Plans .....	203
Bridge Drawings .....	234
Culvert Plans .....	328
Maintenance Buildings .....	25

In addition to this, the shop drawings for 56 bridges, involving prestressed concrete units, were reviewed.

The field work was more varied and complex than in previous years. Many of the field investigations involved large bridges with restrictions, or problems due to road and river alignment and private property. There were 93 field hydrology investigations for bridges and culverts and 103 site inspections of old bridges requiring renovations or replacement.

In conjunction with the Department of Transport, Ontario, 51 load restricting by-laws for bridges and large culverts were reviewed in order to evaluate whether the restrictions were justified and adequate.

### Summary of Bridge Construction

During the calendar year 79 structures, consisting of 17,680 feet of bridging were completed and 210 concrete culverts, ranging in spans from 4 feet to 20 feet.

## PHOTOGRAMMETRY DIVISION

M. H. MacLeod, P.Eng., Photogrammetric Engineer

The Photogrammetry Division continues to provide an increasing volume of planimetric and topographic survey plan requirements for the Planning, Design and Operations Branches of this Department.

Within the Department there is generally a wider acceptance of the Photogrammetric methods of survey, accompanied by a greater understanding and use of plane coordinates by all Branches.

Mapping Consultants are handling approximately 90% of our small scale mapping requirements in Northern Ontario due to an ever increasing demand for large scale mapping in Southern Ontario.

As a result of close liaison with the St. Lawrence Seaway Authority, large areas were mapped suitable to both agencies in the Welland Canal Area.

### *Internally*

—this Division has acquired additional floor space bringing the total occupied space to 7,300 square feet. This is in preparation for an anticipated increase in staff to handle a greater variety of photogrammetric services.

—this year saw the introduction of a new classification series and salary schedule which recognizes the responsibilities of the various levels of Photogrammetrist within the Division.

—new electronic digitizing and coordinatograph equipment was purchased to supplement our complement of five Kelsh stereoplotters and two digitizers.

—a research project with the University of Toronto was completed and the benefits realized as new procedures of aerial triangulation were adopted.

—another project with the University entailed the digitizing of Canada's coastal shoreline, rivers and lakes.

—work of an experimental nature was performed for the Research Branch. This was to determine the feasibility of using stereo photography to measure samples of asphalt by photogrammetric methods.

## INTERPRETATION AND STUDIES GROUP

While actual line location on photographs dropped this year to 3 projects covering 10 miles, stereoscopic photo interpretation and investigations for new route corridors were carried out on 5 projects covering 2,715 miles with reports furnished for functional planning purposes.

A total of 11,986 sq. miles of photographic interpretation was carried out to complete a total of 74 drainage studies covering 1,408 sq. miles and 29 hydrology studies covering 10,365 sq. miles.

This section produced a total of 52 mosaics ranging in scale from 2000' to 1" to

100' to 1" covering 4,454 sq. miles. Four projects covering 10 sq. miles were enlarged to 200' to 1" on mylar base for Functional Report purposes.

Sepiaflex, a process whereby mosaics are photographed and reprinted on mylar base for reproduction purposes were prepared for the various regions. 33 were prepared at 400' to 1" covering 1,711 sq. miles, 6 at 200' to 1" covering 124 sq. miles and 3 at 1000' to 1" covering 79 sq. miles.

This year a total of 5 study plans were produced at the scale of 400' to 1" showing Highways 2 and 401 between Trenton and Toronto covering 170,767 acres.

Files were searched for old, medium and new photography to enable this Section to carry out soil erosion studies on 3 locations covering 10 acres. Work of a miscellaneous nature included 5,100 ft. of parallax bar profile for location comparison purposes, 10 sq. miles of photo interpretation for legal surveys and a tree identification study between Ottawa and Limoges on proposed Highway 417 for aesthetic purposes.

### **STEREOPLOTTING AND CONTROL SECTION**

This section is comprised of two groups, Stereoplotting (Kelsh instruments and associated electronic equipment) and Control (Ground targetting and plotting). The latter group, during the fiscal year, ground targetted a variety of projects at 200' to 1" and 40' to 1" for the production of plans on Controlled Access Highways.

The Stereoplotting Group concentrated most of their activities on the production of 40' to 1" design plans with 2' contours. A total of 23 plans covering 5,400 acres were stereoplotted and draughted onto stable base material. Two plans at 100' to 1" with 5' contours, were also stereoplotted and draughted.

18 projects at 200' to 1" showing a 5' contour interval and covering 71,000 acres were stereoplotted by Photogrammetric Consultants, and cross sections along 16.5 line miles for controlled access highways were also completed during this Fiscal Year.

### **PHOTOGRAMMETRIC LIBRARY**

During this year for stereoplotting purposes 670 Kelsh plates were ordered through the Reproduction Section and prepared by Log-etronic printer.

A total of 22,687 contact aerial prints were ordered to replenish Head Office and Regional Libraries with 4,368 prints being discarded and replaced by later date photography.

## **ENGINEERING SURVEYS DIVISION**

**Y. Andersen O.L.S.—Superintendent**

The Engineering Surveys Division is responsible for all the field engineering survey work and plan preparation work for the Planning and Design Branches in all but the Northwestern Region, as well as establishing Vertical Control (Precise Levels) and Horizontal Control (Co-ordinate Control) on a province-wide basis. Other responsibilities, besides work for the current and future pre-engineering programs, are: Standard surveys and plans of existing highways and secondary highways; Miscellaneous surveys and plans for other Branches; Preparing Strip Maps, updating existing plans in regard to new planimetric detail and the training of technical personnel.



This year, some 1,317 miles of surveys, 1,395 miles of plans, 107 Bridge Site Plans, 51 Railway Crossing Plans and other associated surveys and plans were completed. Approximately 75% of all work was on work projects on the pre-engineering program.

A summary of all work completed is as follows:

#### HEAD OFFICE

Head Office Engineering Surveys is comprised of the following groups: Vertical Control and Horizontal Control Surveys, Training, Head Office Drafting and the Strip Map Group.

#### VERTICAL CONTROL SURVEYS (Precise Levels)

The objective of Vertical Control is to establish permanent and accurate bench marks by first order leveling along highways throughout the province to maintain a standard of indisputable accuracy. The level routes are scheduled whenever possible to meet forthcoming work projects as well as to cover Geodetic bench mark gap areas. They are set in such a way that they will accommodate preliminary planning, design and construction and still remain permanent after completion of road construction.

During the year, 433 precise level bench mark tablets were set and Geodetic elevations assigned, which covered a distance of 366 miles. These were set along the following routes:

Highways 401 and 8	Streetsville to Kitchener
Highways 17 and 105	Raith to Vermilion Bay
Highways 7 and 12	Brampton to Whitby
Highway 7	Peterborough to Actinolite
E. C. Row Expressway	Windsor
Highway 4	St. Thomas to Port Stanley
Highway 25	Highway 401 (Milton) to Acton

In addition to the above:

A test area was set in the vicinity of New Liskeard for the Materials and Testing Division.

Elevations were taken at all six Frost Test Sites in February, May and September.

This year two complete vertical control field parties performed the above work. During the summer an extra field party was in operation, complemented with summer and International exchange students.

Copies of the results of Vertical Control Surveys (bench mark elevations and descriptions) were distributed to the District and Regional Offices, Department of Energy Mines and Resources, Ottawa, Ont. Dept. of Public Works, Ont. Department of Energy and Resources Management and various municipal engineering offices.

#### HORIZONTAL CONTROL SURVEYS (Co-ordinate Control)

This year a Horizontal Control Survey party was introduced to this Division. The first part of the year, 2 of our field men were assigned to Land Surveys Section for training, in recording and operating the precise and electronic measuring equipment used in this type of work, also one of our draftsmen was assigned for training in computations, submissions for the electronic computer and recording of the final results.

The object of Horizontal Control Surveys in this Division is to establish third order

co-ordinates (an accuracy up to 1:30,000 in distance and 1 second in angular measurements) to ensure that all phases of engineering will be of the same datum, from the preliminary planning to the construction stage.

Only two jobs have been processed to date, being:

Belfield Road Extension  
North Bay By-Pass.

#### TRAINING

During the year a total of 78 candidates attended the following courses:

Jr. Draftsman to Draftsman I	—1 course with examinations	8 candidates
Tech. 2, Survey to Tech. 3, Survey	—2 courses with examinations	21 candidates
Tech. 3, Survey to Tech. 1, Eng. Survey	—1 course with examinations	7 candidates
Tech. 1, Survey to Tech. 2, Survey	—2 writings, examinations only	41 candidates
Jr. Draftsman to Draftsman I	—Supplementary examination	1 candidate

#### HEAD OFFICE DRAFTING

The following work was completed during the year:

Existing highway plans were kept up to date by the addition of 1914 land plans, deeds, property sales, registered sub-divisions, annexations and property requests.

A total of 28 profiles, 5 bridge site plans, 3 railway crossing plans were updated by the addition of revised contract grades.

Numerous additions received from Districts 4, 7, 8, 10, 11, 18 and 19 for updating plans per Circular 60-104 were plotted and traced.

13.7 miles of plans were completed, and 22 plans, 23 profiles, 4 D.M.'s, 1 bridge site, 4 railway crossing plans, 1 BK drawing, 2 contract drawings were updated. This work was received from the various regional offices due to overload and central filing of original linens.

Highway number changes involved updating 28 plans and profiles.

#### STRIP PLAN GROUP

The Engineering Surveys Division has on file a Strip Plan for 154 highways, 166 secondary highways and 8 tertiary roads as well as special strip plans for the Kitchener-Waterloo and Lakehead Expressways making a total of 330 Strip Plans.

During the year:

4 new strip plans were prepared

24 strip plans were retraced due to major revision, additions and old age

251 strip plans acquired sufficient new information for updating

Prints of strip plans are supplied on a regular basis to 59 offices throughout the Department. During the year 9,200 prints were issued due to the numerous additions.

In addition to the above, various miscellaneous charts and graphs were produced for the Division.

Complete sets of up to date Militia Maps, Lands & Forests Maps, D.H.O. County Maps and Geodetic Bench Mark Maps are maintained by this group. New and replacement maps are ordered and sent to our various offices. A Militia Map Index over-

lay suitable for mounting on our road map is maintained and updated periodically. Copies are available on request.

### **SOUTHWESTERN REGION**

#### **F. E. Loscombe, Regional Superintendent of Engineering Surveys**

	PLAN	SURVEY	BRIDGE SITES		RAILWAY	CROSSINGS
	MILEAGE	MILEAGE	PLANS	SURVEYS	PLANS	SURVEYS
Dist. No. 1.....	59.3	44.5	5	6	3	2
Dist. No. 2.....	59.4	70.5	13	7	4	1
Dist. No. 3.....	80.1	134.0	6	5	8	4
Dist. No. 4.....	0.3	0.3	2	—	1	—
Dist. No. 5.....	95.0	95.8	4	3	4	5
Dist. No. 8.....	12.6	—	—	—	—	—
Dist. No. 14.....	23.2	23.0	1	—	—	—
TOTALS.....	329.9	368.1	31	21	20	12

In addition to above:

- 82 miles of original cross sections were taken.
- 58 miles of resurfacing cross sections were taken.
- 17 miles of photo control were set.
- 19 Railway site surveys were taken for program inventory.
- 9 Patrol yard surveys were taken and 13 patrol yard plans were prepared.
- 27 Miles of staking for the materials and testing division were set.
- 13 Miles of photo plan field checking carried out.
- 3 Bore hole locations were tied in.
- 1 Energy board plan was prepared.

Numerous additions were sent in by Districts in the Region for updating plans per Circular 60-104. Plans were also updated by numerous additions of new land plan information, registered sub-divisions, property requests and boundary changes. This work accounted for 7% of the drafting staff time.

This Region also assisted the Central, Eastern and Northern Regions by doing survey and plan preparation work on three projects.

### **CENTRAL REGION**

#### **J. D. Barclay, Regional Superintendent of Engineering Surveys**

	PLAN	SURVEY	BRIDGE SITES		RAILWAY	CROSSINGS
	MILEAGE	MILEAGE	PLANS	SURVEYS	PLANS	SURVEYS
Dist. No. 4.....	173.6	61.2	33	13	13	11
Dist. No. 6.....	101.3	55.2	1	3	3	—
Dist. No. 7.....	95.7	51.5	6	8	4	2
TOTALS.....	370.6	167.9	40	24	20	13

In addition to above:

- 30 miles of original cross sections were taken.
- 118 miles of preliminary cross sections were taken.
- 46 miles of photo control were set.
- 1 Railway site survey was taken for program inventory.
- 5 Patrol yard surveys were taken and 5 patrol yard plans were prepared.
- 1 Safety rest area survey was taken and plan prepared.
- 5 Commuter station surveys were taken and 7 commuter station plans were prepared.

- 3 Energy Board Surveys were carried out and 4 Energy Board Plans were prepared.
- 21 Interchange and intersection surveys were taken.
- 14 miles of photo plan field checking were carried out.
- 7 Bore hole locations were tied in.

## EASTERN REGION

## A. G. Boucher, Regional Superintendent of Engineering Surveys

	PLAN	SURVEY	BRIDGE SITES		RAILWAY CROSSINGS	
	MILEAGE	MILEAGE	PLANS	SURVEYS	PLANS	SURVEYS
Dist. No. 8.....	63.3	102.9	4	5	3	3
Dist. No. 9.....	138.9	147.1	11	9	2	2
Dist. No. 10.....	201.5	173.6	4	4	1	—
TOTALS.....	403.7	423.6	19	18	6	5

In addition to above:

- 56 miles of Original Cross Sections were taken.
- 66 miles of Photo Plan Field Checking were carried out.
- 26 Railway Site Surveys were carried out for Program Inventory.
- 8 Structure surveys were carried out for Program Inventory.
- 11 Patrol Yard Surveys were taken and 12 Patrol Yard Plans were prepared.
- 7 Energy Board Plans were prepared.
- 21 Miles of staking for the materials and testing division were set.
- 9 Miles of miscellaneous surveys were run and 45 miles of appropriate plans were prepared.

Numerous additions were sent in by Districts in this Region for updating plans per Circular 60-104. This work accounted for 6% of the drafting staff time.

## NORTHERN REGION

## C. G. Campbell, Regional Superintendent of Engineering Surveys

	PLAN	SURVEY	BRIDGE SITES		RAILWAY CROSSINGS	
	MILEAGE	MILEAGE	PLANS	SURVEYS	PLANS	SURVEYS
Dist. No. 11.....	39.8	69.1	4	5	3	1
Dist. No. 13.....	56.2	60.6	5	3	1	—
Dist. No. 14.....	42.0	58.1	—	4	—	2
Dist. No. 17.....	152.5	170.0	8	6	1	4
TOTALS.....	290.5	357.8	17	18	5	7

In addition to above:

- 65 miles of original cross sections were taken.
- 59 miles of preliminary cross sections were taken.
- 60 miles of resurfacing cross sections were taken.
- 1 Energy Board Survey was taken.
- 11 Patrol Yard Surveys were taken and 3 patrol yard plans were prepared.
- 52 Railway site surveys were carried out for program inventory.
- 36 miles of photo control were set.



## ELECTRONIC COMPUTING BRANCH

A. E. Goodwin, P. Eng., Director

The purpose of the branch is to provide programming, systems and data processing services to all branches of the department in their diversified engineering, accounting, statistical, and/or management responsibilities. Consultation is also extended to other departments of the government and the Electronic Computing Branch is officially recognized as the engineering and scientific computer installation for the Government.

Significant new projects for computer applications and modifications to existing programs which resulted in more rapid processing services were undertaken by this Branch for the Department during the fiscal year 1966-67.

### DESIGN BRANCH

- Digital Terrain Model
- Cross Section Graph Plotting
- Analysis of Continuous Monolithic Curved Bridges
- Design and Generation of Retaining Wall Contract Documents
- Geometric Programs Expanded to Include Compound Spiral Calculations
- Hydrometric Record Analysis
- Bridge Inventory
- Bridge Design and Analysis Program—Modification
- Drainage Analysis Program

### FINANCIAL BRANCH

- Canada Pension Calculation Edit Program—Regular and Probationary Payroll
- Regular and Probationary Program Package—Revised
- Municipal Subsidy Annual Report—Automated

### OPERATIONS BRANCH

- Concrete Quality Control Package—Modification
- Road and Bridge Profile Plotting
- “Slope Indicator” Analysis

### PLANNING BRANCH

- Perspective Views—Plotting of 14 Miles of Highway
- Highway Interchange Traffic Analysis
- Transportation Studies Program Package—Modification
- Traffic Assignment Graph Plot
- Multi-Path Assignment Program—Modification
- Generalized O/D Survey Analysis

### RESEARCH BRANCH

- Maintenance Management Reporting Program Package
- Autobody Steel Corrosion Study
- Truck Weight Statistical Analysis (From Weighing Scales)

## SERVICES BRANCH

- Traverse/GROOM/Conversion Program Package
- Site and Building Inventory
- Well Inventory

## MANAGEMENT

- Management Information Systems (Pre-Engineering)
- Predicting Expenditures on Construction Projects
- Code Standards on Construction Items
- Staging Analysis of Large Complex Engineering Projects through Critical Path Methods
- Multi-variate Analysis Program Package
- Critical Path Graphic Presentation
- Employee Suggestion Program Package
- Contract Bid Analysis—Addition to the General Recovery Program
- Expansion of Employee Skills Matching Program

## PERSONNEL BRANCH

- Employee Merit Increase Program—Rewritten

## DEPARTMENT OF CIVIL SERVICE

- Pay Research Data Analysis—1965 Data
- Development of a Proposal for a Personnel Resources System
- Topic Magazine Address Labels

## DEPARTMENT OF LABOUR

- Wage Distribution Survey Analysis
- Labour Dispute Statistical Analysis
- Overtime Analysis—By Zone and Industry

## DEPARTMENT OF LANDS AND FORESTS

- Timber Scaling and Invoice Program—Extended to 7 Regions with Tree Length Scaling
- Timber Density Study
- Park Users Survey—1966

## DEPARTMENT OF AGRICULTURE

- Dairy Herd Feeding Analysis—Annual Report

## ONTARIO PROVINCIAL POLICE

- Prosecution Statistics Program—Other Than Traffic Offences

## ENERGY RESOURCES MANAGEMENT

- Contour and Isopach Plotting Program

## ONTARIO WATER RESOURCES COMMISSION

- Great Lakes Study—Data Analysis and Error Checking Program Package

The following list represents significant applications in production.

JOB DESCRIPTION	NO. OF MILES	NO. OF JOBS
Bridge Calculation—all types.....		3,264
Land Survey Calculations.....		830
Geometrics—Azimuth Distance & Ramp Co-ordinates.....		129
Monthly Progress Payment Certificates.....		88
Staff Resources Inventory Reports.....		61
Critical Path Reports with Updating.....		874
Photogrammetric Reports and Plots.....		431
Road Design Quantity Calculations.....	993	90
Road Design Elevation & Alignment Reports.....	376	69
Road Design Cross Section Plots.....	427	77
Earth Quantity Calculations—Payment.....	107	19
Operations Cross Section Plots.....	203	54
Office Services Inventory Reports.....		405
Slope Stability Design.....		152
Equipment Analysis and Reports.....		46
Planning and Project Scheduling Reports.....		246
Area Transportation Studies.....		31
Origin and Destination Surveys.....		12
Hourly Traffic Counts.....		611
Personnel.....		558
Accounts.....		4,201

The Electronic Computing Branch has in its installation sophisticated computer and graph plotting equipment to develop and process engineering, scientific, and accounting applications consisting of:

- an IBM 7044 System
- an IBM 1460 System
- an IBM 1401 System
- an EAI Dataplotter

## FINANCIAL COMPTROLLER'S BRANCH

J. G. McMillen, C.A., Comptroller

The following statements outline the expenditure and cash receipts of the Department of Highways, Ontario, for the year ended March 31, 1967.

- I. Ordinary Expenditure
- II. Capital Payments, including Expenditure Summary
- III. Trans-Canada Highway
- IV. The "Queensway"—Ottawa
- V. Receipts
- VI. Comparison of Average Unit Prices Paid on Contracts
- VII. Burlington Bay Skyway
- VIII. Garden City Skyway

### TOTAL EXPENDITURE

The "Expenditure Summary" (Statement II) sets out total ordinary expenditure and capital payments at \$390,567,594. The following is a comparison of total expenditure with previous years.

1962.....	\$243,238,200	1965.....	\$299,036,127
1963.....	251,152,745	1966.....	336,146,806
1964.....	280,476,989	1967.....	390,567,594

### TRANS-CANADA HIGHWAY AGREEMENT

Expenditure of the Department under this agreement is shown in Statement III in the amount of.....\$231,492,314  
 with funds recovered or recoverable of.....117,530,361  
 and a net cost to the Department of.....\$113,961,953

### RECOVERABLE EXPENDITURE

Within the fiscal year, the Department recovered \$16,346,485 made up as follows:

Trans-Canada Highway.....	\$	2,290,907
Ottawa Queensway Government of Canada.....	\$	609,662
City of Ottawa.....	500,000	1,109,662
Railway Bridges.....		2,024,410
Total of items detailed in Statement II.....	\$	5,424,979
Federal-Provincial Resources Roads.....		598,616
Ontario Department of Mines.....		270,169
Sundry items credited to expenditure or to revenue.....		10,052,721
	\$	16,346,485

### PRE-QUALIFICATION OF CONTRACTORS

There were 286 capital contracts awarded during the year, of which 199, representing 69.6% of the total and 96.3% of the Tender Value, required the pre-qualification of contractors. Of the 149 ordinary contracts awarded during the year 72 or 48.3% representing 81.6% of the Tender Value, required pre-qualification. An average of 4.4 bids



was received on pre-qualified contracts as compared with 3.3 bids on un-qualified contracts.

### INDEXES OF TENDER PRICES PAID ON ROAD CONTRACTS AND FOR MATERIALS

To illustrate the trend of prices paid this year in relation to previous years, the following charts are submitted showing:

Index of Tender Prices Paid on Road Contracts (Chart I)

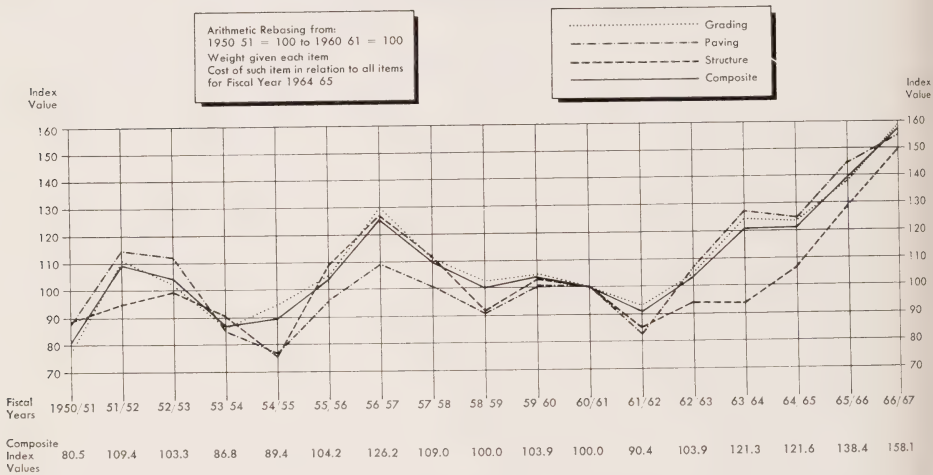
Index of Tender and Material Prices (Chart II)

It is evident from these indexes that unit prices for the majority of tender items showed a substantial increase, and prices paid for road materials rose slightly during the year.

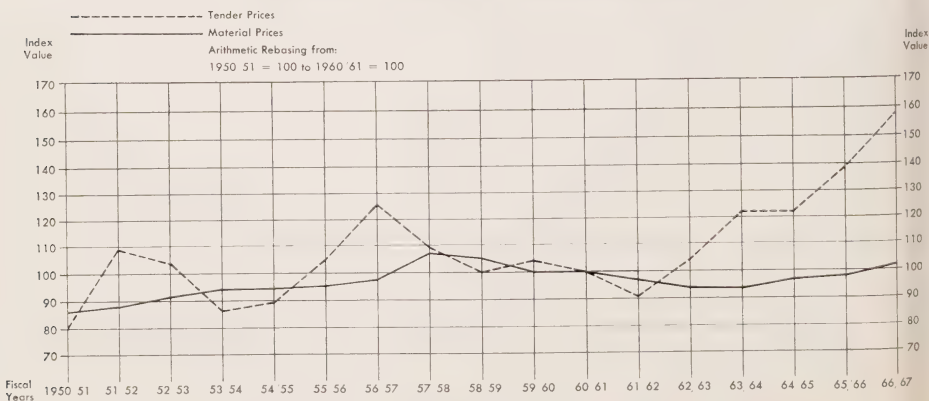
### BURLINGTON BAY SKYWAY AND GARDEN CITY SKYWAY

The accompanying statements indicate a continued upward trend in revenue and in the number of vehicles using the skyways.

**CHART I  
TENDER PRICE INDEXES**



**CHART II  
COMPARISON OF TENDER AND MATERIAL PRICE INDEXES**



STATEMENT I

Ordinary Expenditure

For the Fiscal Years ending March 31, 1967 and March 31, 1966

	YEAR ENDING MARCH 31, 1967	YEAR ENDING MARCH 31, 1966
Maintenance of King's Highways and Secondary Highways—		
Winter Maintenance—		
Contract and day labour.....	\$24,649,683	\$20,181,609
Equipment Operating costs due to stand-by (60%).....	516,430	136,159
Summer Maintenance—		
Patrol costs.....	13,709,504	11,597,016
Gravel crushing contract and day labour.....	1,056,727	857,652
Prime-contract and day labour.....	582,436	498,668
Hot mix Patching, contract and day labour.....	1,437,074	1,301,978
Surface treatment, contract and day labour.....	435,557	386,026
Mulch, day labour.....	191,809	117,966
Major bridge repairs.....	388,473	422,959
Equipment operating costs due to stand-by (40%).....	344,287	90,776
Operation of ferries.....	757,656	724,292
Flood and other emergencies.....	31,059	21,150
District Office Overheads, including engineering, warehouse and municipal.....	9,952,391	8,437,843
Expenditures recovered but credited to revenue .....	263,124	266,668
Increase (decrease) in inventories .....	198,289	164,665
	<u>\$ 54,514,499</u>	<u>\$45,205,427</u>
Repaving of present roads .....	2,154,792	1,665,560
Maintenance of development roads.....	353,382	73,216
Maintenance of roads in Unincorporated Townships in Northern Ontario.....	987,515	719,439
Building repairs.....	378,905	358,976
	<u>58,389,093</u>	<u>\$48,022,618</u>
Total (see Appendices 2 and 3, for distribution of above expenditures by counties, roads, etc.).....		
General Operating Expenditures—		
Purchase of new trucks, tractors, graders, plows and other road equipment.....	\$ 3,349,993	\$ 2,460,408
Printing and stationery.....	1,011,076	1,015,146
Office furniture and equipment.....	336,226	347,527
Workmen's compensation.....	296,644	263,697
Insurance and Claims.....	403,658	248,801
Unemployment Insurance.....	155,422	161,853
Maintenance of Buildings and area office rentals.....	199,120	159,831
Teletype rentals.....	80,497	81,680
Staff training.....	51,586	60,628
Recoverable expenditures (net).....	51,105	11,648
Central stores, increase (decrease) in stock.....	(4,827)	34,971
	<u>\$ 5,930,500</u>	<u>\$ 4,846,190</u>

## STATEMENT I (Cont'd)

	YEAR ENDING MARCH 31, 1967	YEAR ENDING MARCH 31, 1966
Head Office—		
General administrative and operating staff salaries.....	\$ 5,721,775	\$ 4,904,847
Travelling expenses.....	306,515	286,407
Electronic section salaries expenses and equipment rentals.....	1,458,105	139,387
Sundry.....	1,125,664	966,800
	<u>8,612,059</u>	<u>\$ 6,297,441</u>
Roads Publicity, etc.....	224,762	149,943
Burlington Bay Skyway, toll collection costs.....	\$ 261,711	\$ 248,530
Garden City Skyway, toll collection costs.....	189,121	165,159
	<u>\$ 450,832</u>	<u>\$ 413,689</u>
Commuter Rail Project.....	324,820	137,130
Municipal Subsidies—		
County roads.....	\$ 7,430,461	\$ 6,632,233
Township roads.....	18,718,975	16,700,455
Cities towns and villages.....	15,805,489	14,367,889
	<u>\$ 41,954,925</u>	<u>\$37,700,577</u>
TOTAL ORDINARY EXPENDITURES	\$115,886,991	\$97,567,588

## PER PUBLIC ACCOUNTS

Total Ordinary Expenditures per Public Accounts.....	\$115,886,991	\$97,567,588
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## STATEMENT II

## Capital Payments

For the Fiscal Years Ending March 31st, 1967 and March 31st, 1966

	YEAR ENDING MARCH 31, 1967	YEAR ENDING MARCH 31, 1966
Construction of King's Highways and Secondary Highways—		
Payments to Contractors.....	\$89,749,093	\$80,997,541
Materials and sundry contract expenditures.....	41,606,610	37,287,043
Engineering.....	13,856,853	13,212,637
	<u>\$145,212,556</u>	<u>\$131,497,221</u>
Construction of Development Roads.....	17,980,722	16,999,562
Construction of roads in Unincorporated Townships in Northern Ontario.....	544,786	440,246
Expenditures allocated to the above roads		
Property purchase.....	\$14,498,970	\$12,248,123
Land Surveys.....	2,170,640	1,881,876
Planning.....	1,228,689	1,239,166
Design.....	6,097,706	5,778,107
Buildings.....	1,195,733	1,221,334
	<u>\$ 25,191,738</u>	<u>\$ 22,368,606</u>

## STATEMENT II (Cont'd)

	YEAR ENDING MARCH 31, 1967	YEAR ENDING MARCH 31, 1966
Total (see Appendices 2 and 3 for distribution of above expenditure by counties, roads, etc.).....	\$188,929,802	\$171,305,635
Expenditures of Head Office branches unallocated and not included above:		
Right of Way Division.....	\$ 1,161,522	\$ 1,083,010
Land Surveys.....	1,778,132	1,669,186
Planning.....	3,192,978	2,892,834
Design.....	2,383,126	1,938,452
Buildings.....	20,000	26,365
Soils Materials and Testing.....	3,371,116	3,028,236
Engineering Audit.....	846,846	723,948
Increase (decrease) in Bailey Bridges and steel inventories.....	(24,400)	173,415
Net recoverable expenditures debit (credit).....	(6,661,291)	(4,803,768)
Electronic Section, salaries and equipment rentals.....	—	800,568
Sundry.....	393,728	346,186
Commuter Rail Project.....	\$ 6,461,757	\$ 7,878,432
Municipal Subsidies:	9,282,421	30,987
County Roads.....	\$17,232,551	\$16,629,164
Township Roads.....	20,652,562	16,757,734
Cities, Towns and Villages.....	37,546,489	31,552,978
	\$ 75,431,602	\$ 64,939,876
TOTAL GROSS CAPITAL PAYMENTS ON CONSTRUCTION.....	\$280,105,582	\$244,154,930
Less Recoveries:		
Trans-Canada Highway.....	\$ 2,290,907	\$ 2,536,827
Ottawa Queensway—		
Government of Canada.....	609,662	483,000
City of Ottawa.....	500,000	1,250,000
Railway Bridges.....	2,024,410	1,305,885
	\$ 5,424,979	\$ 5,575,712
NET CAPITAL PAYMENTS PER PUBLIC ACCOUNTS.....	\$274,680,603	\$238,579,218

## EXPENDITURE SUMMARY

Ordinary expenditures.....	\$115,886,991	\$ 97,567,588	
Capital payments, net.....	274,680,603	238,579,218	
	\$390,567,594		\$336,146,806
TOTALS.....	\$390,567,594		\$336,146,806



### STATEMENT III

#### Trans-Canada Highway

The following statement sets out expenditure and amounts recoverable on the Trans-Canada Highway from the inception of the agreement with the Government of Canada on April 24, 1950.

	REFUNDABLE BY GOVERNMENT OF CANADA	EXPENDED BY DEPARTMENT
Refunded by the Government of Canada on account of work performed prior to April 24, 1950.....	\$ 1,569,640	\$.....
Year ending March 31, 1951.....	2,749,329	7,043,559
“ “ “ “ 1952.....	3,453,866	8,242,801
“ “ “ “ 1953.....	4,103,753	11,746,130
“ “ “ “ 1954.....	2,486,860	9,686,452
“ “ “ “ 1955.....	6,274,487	5,675,343
“ “ “ “ 1956.....	3,365,959	9,602,299
“ “ “ “ 1957.....	4,855,053	13,996,280
“ “ “ “ 1958.....	12,381,361	20,683,306
“ “ “ “ 1959.....	15,803,757	27,995,777
“ “ “ “ 1960.....	17,662,423	28,412,552
“ “ “ “ 1961.....	16,500,840	24,786,757
“ “ “ “ 1962.....	11,623,549	16,168,477
“ “ “ “ 1963.....	3,958,997	8,164,528
“ “ “ “ 1964.....	2,990,783	6,784,073
“ “ “ “ 1965.....	2,617,937	5,591,696
“ “ “ “ 1966.....	2,536,827	6,432,938
“ “ “ “ 1967.....	2,290,907	7,329,474
Expenditure by Department for property and other non-recoverable expenditures.....		13,149,872
TOTAL TO MARCH 31, 1967.....	\$117,226,328	\$231,492,314
Further claims to be submitted based on expenditures to March 31, 1967 Claim No. 166.....	190,670	
Claim No. 167.....	113,363	
TOTAL REFUNDS BY GOVERNMENT OF CANADA.....		\$117,530,361
NET ESTIMATED COST TO MARCH 31, 1967.....		<u>\$113,961,953</u>

### STATEMENT IV

#### The Queensway-Ottawa

The following statement sets out expenditures and amounts recoverable on the “Queensway”—Ottawa since the signing of the agreement with the Government of Canada, the Federal District Commission and the City of Ottawa, on March 19, 1957.

#### EXPENDED BY DEPARTMENT:

Year ending March 31, 1958.....	\$ 563,956
“ “ “ “ 1959.....	1,720,076
“ “ “ “ 1960.....	3,860,475
“ “ “ “ 1961.....	5,723,245
“ “ “ “ 1962.....	3,889,962
“ “ “ “ 1963.....	3,778,739
“ “ “ “ 1964.....	5,215,154
“ “ “ “ 1965.....	3,411,781
“ “ “ “ 1966.....	1,904,433
“ “ “ “ 1967.....	2,706,434

\$32,774,255

## STATEMENT IV (cont'd)

## RECOVERED FROM FEDERAL GOVERNMENT:

Year ending March 31, 1958	\$ 204,500
" " " 1959	109,221
" " " 1960	773,681
" " " 1961	1,367,729
" " " 1962	1,380,118
" " " 1963	951,729
" " " 1964	1,211,642
" " " 1965	1,071,872
" " " 1966	483,000
" " " 1967	609,662

\$ 8,163,154  
19,518

Further amounts to be recovered based on expenditures to March 31, 1967

Total recovered from Federal Government..... \$ 8,182,672  
Recovered from the City of Ottawa..... 4,900,000

## AMOUNTS TO BE RECOVERED FROM:

The City of Ottawa..... \$ 1,996,455  
Federal Government under T.C.H. Contracts..... 1,308,000 3,304,455

TOTAL RECOVERIES ..... \$16,387,127

NET ESTIMATED COST TO MARCH 31, 1967..... \$16,387,128

## STATEMENT V

## Statement of Receipts

For the Fiscal Years ending March 31, 1967 and March 31, 1966

	YEAR ENDING	
	MARCH 31, 1967	MARCH 31, 1966
Sales of land and buildings.....	\$ 198,483	\$ 247,424
Property Rentals.....	1,231,986	838,344
Sales of service and materials.....	611,286	546,284
Permits—sign and housemoving.....	77,068	101,144
Gas line franchises.....	9,095	6,300
Burlington Bay Skyway.....	1,073,864	1,028,756
Garden City Skyway.....	711,541	679,657
Miscellaneous.....	166,296	161,377
TOTAL RECEIPTS.....	\$4,079,619	\$3,609,286
Distribution:		
Ordinary revenue.....	3,793,506	3,254,470
Capital receipts.....	286,113	354,816
	\$4,079,619	\$3,609,286

**STATEMENT VI**  
**Comparison of Unit Prices on Contracts for Use in Tender Price Index**  
**For Period April 1, 1950 to March 31, 1967**

Fiscal Year	Clearing Acre	Grubbing Acre	Earth Excavation Cu. Yd.	Earth Excavation Grading Cu. Yd.	Earth Excavation Borrow Cu. Yd.	Rock Excavation Cu. Yd.	Gran- ular "A" Ton	Gran- ular "B" Ton	% Crushed Gravel "A" Ton	% Crushed Gravel "B" Ton	Sand Cushion Ton	Earth Com- paction Cu. Yd.	Com- paction Equip- ment Hour	Water for Com- paction M. Gal.	Concrete Culverts Cu. Yd.	Placing Concrete Pipe 12" Lin. Ft.	Placing CSP 18" Lin. Ft.
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1950/51	96.78	130.98	.36	—	—	1.42	.87	.90	1.06	.91	.56	.026	—	6.19	20.65	—	—
1951/52	148.84	151.20	.54	—	—	1.78	1.51	1.32	1.43	1.03	.66	.032	—	7.50	26.57	—	—
1952/53	125.88	170.20	.39	—	—	1.64	1.38	1.40	1.43	1.30	.77	.029	—	6.74	22.22	—	—
1953/54	127.63	144.39	.37	—	—	1.27	1.17	1.02	1.34	1.02	.59	.027	—	6.24	23.14	—	—
1954/55	132.50	153.49	.40	—	—	1.73	1.15	1.19	1.30	1.13	.68	.027	—	6.05	22.06	—	—
1955/56	184.15	213.20	.44	—	—	1.81	1.28	1.46	1.34	1.28	.62	.035	—	5.69	26.13	—	—
1956/57	235.79	251.10	.60	—	—	2.43	1.48	1.62	1.41	1.38	.95	.045	—	6.44	32.11	—	—
1957/58	203.59	257.52	.45	—	—	2.14	1.34	1.30	1.33	1.33	.77	.044	—	5.39	27.56	—	—
1958/59	190.61	235.17	.40	—	—	2.08	1.26	1.36	1.18	1.17	.69	.042	—	4.48	25.05	—	—
1959/60	163.30	200.55	.41	—	—	2.01	1.35	1.29	1.16	1.28	.77	—	6.44	4.30	26.09	—	—
1960/61	162.63	207.19	.43	—	—	1.82	1.18	1.11	1.53	1.27	.68	—	6.65	3.75	24.62	—	—
1961/62	162.19	188.27	.36	—	—	1.77	1.21	1.08	1.07	1.13	.67	—	8.24	3.21	21.13	—	—
1962/63	201.68	197.17	.45	—	—	1.85	1.25	1.30	1.20	1.25	.69	—	9.50	3.25	25.79	—	—
1963/64	270.43	250.92	.57	—	—	2.22	1.49	1.54	1.41	1.36	.72	—	9.50	3.77	28.96	.98	.67
1964/65	285.29	299.10	.57	.57	.61	2.45	1.39	1.19	1.48	1.48	.83	—	9.50	3.51	28.33	1.69	.83
R 1965/66	353.87	343.89	—	.67	.70	2.59	1.66	1.39	1.13	1.24	1.04	—	10.85	4.21	40.30	1.74	.99
1966/67	490.98	444.98	—	.76	.83	3.19	1.73	1.51	1.33	1.84	1.03	—	10.83	4.76	41.12	1.74	.99

STATEMENT VI (cont'd)  
Comparison of Unit Prices on Contracts for Use in Tender Price Index  
For Period April 1, 1950 to March 31, 1967

Fiscal Year	Concrete Base Sq. Yd.	Concrete Pavement Sq. Yd.	Bituminous Hot Mix Top Course Ton	Bituminous Hot Mix Base Course Ton	Structural Steel Fabrication Ton	Structural Steel Erection Ton	Structural Steel Fabrication & Supply & Erection Ton	Structural Steel Delivery Ton	Concrete in Structure Foundations Cu. Yd.	Concrete in Structures Cu. Yd.
1950/51	—	—	3.19	3.06	223.41	75.09	—	—	29.63	—
1951/52	—	—	4.17	3.99	239.72	76.84	—	—	32.29	—
1952/53	—	—	3.92	4.00	256.02	78.58	—	—	33.49	—
1953/54	—	—	3.08	3.03	216.76	60.27	—	—	32.88	—
1954/55	—	—	2.68	2.75	194.46	40.04	—	—	27.36	—
1955/56	—	—	4.03	3.12	281.23	96.28	—	—	36.64	—
1956/57	—	—	4.51	3.59	354.80	119.12	—	—	39.85	—
1957/58	—	—	4.17	3.28	277.96	87.27	—	—	38.11	—
1958/59	—	—	3.93	2.89	237.93	59.50	—	—	31.98	—
1959/60	—	—	4.31	3.21	246.28	63.69	—	—	37.77	—
1960/61	—	—	3.93	3.37	277.75	75.32	—	—	32.66	—
1961/62	—	—	3.60	2.62	233.71	39.78	—	—	29.50	—
1962/63	—	—	4.40	3.52	267.18	58.48	—	—	31.34	—
1963/64	—	—	4.99	4.30	259.06	50.86	—	—	31.85	—
1964/65	2.97	2.69	4.51	4.37	278.79	60.00	322.64	9.03	26.53	52.41
R1965/66	3.38	3.26	4.88	5.02	—	—	405.63	4.48	33.35	61.32
1966/67	3.83	3.33	5.69	5.48	—	—	498.53	10.12	35.03	67.55

R: Major revision—Prices published are adjusted to maintain comparability.



## STATEMENT VII

## Burlington Bay Skyway

Comparative Statement of Toll Collections, Revenues and Expenditures  
For the Fiscal Years Ending March 31, 1967 and March 31, 1966

	YEAR ENDING MARCH 31, 1967	YEAR ENDING MARCH 31, 1966	INCREASE (DECREASE)	PERCENTAGE
REVENUES:				
Toll Revenue Earned:				
Class I vehicles.....	\$ 770,527	\$ 734,927	\$ 35,600	4.84
Class II vehicles.....	82,373	79,987	2,386	2.98
Class III vehicles.....	169,087	168,952	135	.07
Total Revenue Earned.....	\$ 1,021,987	\$ 983,866	\$ 38,121	3.87
Plus-Tickets and tokens sold but not presented and other net adjustments.....	45,084	38,418	6,666	17.35
	\$ 1,067,071	\$ 1,022,284	\$ 44,787	4.38
Add Premium U.S. Funds.....	6,793	6,472	321	4.95
Total Revenue.....	\$ 1,073,864	\$ 1,028,756	\$ 45,108	4.38
DIRECT EXPENDITURES:				
Toll operating staff salaries.....	\$ 228,126	\$ 208,109	\$ 20,017	9.61
Travelling expenses.....	1,301	2,666	(1,365)	(51.21)
Office Expenses.....	10,757	7,568	3,189	42.13
Light, heat, water telephone, etc....	5,667	6,910	(1,243)	(17.99)
Maintenance of building.....	3,046	4,258	(1,212)	(28.47)
Maintenance of equipment.....	9,150	8,027	1,123	13.99
Rental of Equipment.....	3,664	10,992	(7,328)	(66.67)
	\$ 261,711	\$ 248,530	\$ 13,181	5.30
Excess of Revenues over Expendi- tures.....	\$ 812,153	\$ 780,226	\$ 31,927	4.09
TRAFFIC:				
Class I vehicles.....	9,220,021	8,668,755	\$551,266	6.35
Class II vehicles.....	499,508	480,746	18,762	3.90
Class III vehicles.....	990,219	977,478	12,741	1.30
TOTAL.....	10,709,748	10,126,979	582,769	5.75

## STATEMENT VIII

## Garden City Skyway

Comparative Statement of Toll Collections, Revenues and Expenditures  
For the Fiscal Years Ending March 31, 1967 and March 31, 1966

	YEAR ENDING MARCH 31, 1967	YEAR ENDING MARCH 31, 1966	INCREASE (DECREASE)	PERCENTAGE
REVENUES:				
Toll Revenue Earned:				
Class I vehicles.....	\$ 584,004	\$ 556,292	\$ 27,712	4.98
Class II vehicles.....	45,568	41,994	3,574	8.51
Class III vehicles.....	70,607	63,294	7,313	11.55
Total Revenue Earned.....	\$ 700,179	\$ 661,580	\$ 38,599	5.83
Plus-Tickets and tokens sold but not presented and other net adjustments.....	cr. 1,245	5,563	(6,808)	—
	\$ 698,934	\$ 667,143	\$ 31,791	4.77
Add Premium U.S. Funds.....	12,607	12,515	92	0.74
Total Revenue.....	\$ 711,541	\$ 679,658	\$ 31,883	4.69
DIRECT EXPENDITURES:				
Toll operating staff salaries.....	\$ 170,061	\$ 145,951	\$ 24,110	16.52
Travelling expenses.....	535	743	(208)	(28.00)
Office Expenses.....	3,152	3,292	(140)	(4.25)
Light, heat, water, telephone, etc.	7,921	9,198	(1,277)	(13.88)
Maintenance of building.....	3,710	1,648	2,062	125.12
Maintenance of equipment.....	3,741	4,327	(586)	(13.54)
	\$ 189,120	\$ 165,159	\$ 23,961	14.51
Excess of Revenue over Expendi- ture.....	\$ 522,421	\$ 514,499	\$ 7,922	1.54
TRAFFIC:				
Class I vehicles.....	6,190,755	5,847,343	343,412	5.87
Class II vehicles.....	248,357	220,582	27,775	12.59
Class III vehicles.....	393,384	344,258	49,126	14.27
TOTAL.....	6,832,496	6,412,183	420,313	6.55
TOLL RATES:				
		CASH	TICKETS	
Class I vehicles, passenger vehicles and trucks having not more than two axles and weight-carrying capacity of less than one ton....		.15c.	.05c.	
Class II vehicles, passenger vehicles with trailers and trucks having not more than two axles and a weight-carrying capacity of one ton or more.....		.25c.	.10c.	
Class III vehicles, trucks with three axles or more and public vehicles..		.45c.	.15c.	

## LEGAL BRANCH

D. A. Crosbie, B.Sc.F., Director, Legal Branch

### SOLICITORS

The Director and four solicitors are located in the main office of the Department at Downsview to provide legal services and advice to the various branches of the Department. There is a regional solicitor in the Toronto regional office to provide legal services and advice to personnel of that office.

### INSURANCE AND CLAIMS SECTION

This section deals with all matters pertaining to insurance coverage carried by this and other departments, and is also responsible for the handling, negotiating and settling of various types of claims. The section investigates and supervises the settlement of Workmen's Compensation third party claims where injuries occur to Government employees. There are other miscellaneous types of tortious claims which are also dealt with by this section.

### VOLUME OF CLAIMS AND INVESTIGATION

The volume of claims and their various categories for the fiscal year under review (with comparative figures for 1965-66) is as follows:

	1966-67	1965-66
Claims against Department—non-repair of highways.....	883	686
Claims against Department—miscellaneous liability.....	2,797	464
Claims by Department—for damage to Department property.....	6,040	5,554
Claims by Department—for personal injuries to employees.....	66	52
Investigations of accidents—involving Government vehicles.....	884	883
<b>TOTALS.....</b>	<b>10,670</b>	<b>7,639</b>

It will be noted that the number of claims for 1966-67 amounted to 3,031 in excess of 1965-66. This increase includes approximately 2,000 claims for damage arising out of a surface treatment operation in the Sarnia area. The above figures do not include complaints on a variety of minor matters which were also investigated and resolved.

## OPERATIONS BRANCH

J. B. WILKES, P.Eng., Director of Operations

### THE SIGN AND BUILDING PERMITS SECTION

R. P. Bruce, Superintendent

#### Building Permits:

Applications received.....	5,826
Permits issued.....	5,493

#### Entrance Permits:

Applications received.....	2,607
Permits issued.....	2,442

#### Encroachment Permits:

Applications received.....	1,328
Permits issued.....	1,010

#### Sign Permits:

Applications received.....	6,025
New Permits issued.....	1,647
Permit renewals.....	4,416

NOTE: Licenses are issued according to the calendar year, January 1st to December 31st.

### FIELD ADVERTISING SIGN PERMITS

Fiscal Year April 1st, 1966, to March 31st, 1967

Number of Field Advertising Sign Permits issued for fiscal year..... 4,858

Value of Field Advertising Sign Permits issued for fiscal year..... \$56,864

NOTE: Permits are issued for the calendar year.

### FIELD ADVERTISING SIGNS

DISTRICT	No. RECEIVED	No. APPLICATIONS	No. REFUSED	No. PENDING	AMOUNT RECEIVED
Chatham.....	269	268	1	—	\$ 3,175.00
London.....	375	375	—	—	4,485.00
Stratford.....	386	383	3	—	3,790.00
Hamilton.....	149	141	5	3	3,874.00
Owen Sound.....	525	510	13	2	5,450.00
Toronto.....	270	265	5	—	3,930.00
Port Hope.....	325	325	—	—	3,940.00
Kingston.....	288	283	4	1	2,780.00
Ottawa.....	259	248	11	—	4,585.00
Bancroft.....	221	221	—	—	1,595.00
Huntsville.....	399	392	7	—	3,905.00
North Bay.....	243	235	8	—	2,255.00
New Liskeard.....	192	192	—	—	1,655.00
Cochrane.....	76	76	—	—	660.00
Sudbury.....	223	221	2	—	2,580.00
Sault Ste. Marie.....	188	182	6	—	3,095.00
Fort William.....	322	322	—	—	2,925.00
Kenora.....	219	219	—	—	2,185.00
TOTALS.....	4,929	4,858	65	6	\$56,864.00



## VALUATION OF BUILDING PERMITS

DISTRICT	VALUE OF PERMITS ISSUED
Chatham.....	\$ 20,236,966
London.....	78,103,789
Stratford.....	14,923,247
Hamilton.....	37,644,696
Owen Sound.....	6,193,854
Toronto.....	37,741,756
Port Hope.....	6,216,575
Kingston.....	6,913,056
Ottawa.....	4,104,550
Bancroft.....	2,389,516
Huntsville.....	4,102,110
North Bay.....	7,003,684
New Liskeard.....	1,098,550
Cochrane.....	844,425
Sudbury.....	4,037,400
Sault Ste. Marie.....	877,250
Fort William.....	605,888
Kenora.....	961,433
GRAND TOTAL.....	\$233,998,745

## CONSTRUCTION DIVISION

H. A. Tregaskes, P.Eng., Construction Engineer

During the fiscal year ending March 31, 1967 a large amount of construction was completed. Work on major projects underway for several years continued.

At the end of the year, on the Macdonald-Cartier Freeway reconstruction of the Toronto by-pass was proceeding on schedule and with similar progress in 1967 it is expected that the sections of the by-pass between Avenue Road and Warden Avenue and between Wendall Avenue and Kipling Avenue will be completed by November of 1967. Work continued in the Gananoque to Brockville and Iroquois easterly areas with good progress being made. A considerable amount of flyover and interchange work on the Macdonald-Cartier Freeway was underway during the year.

On the Ottawa Queensway the section between O'Connor Street and Alta Vista Drive was opened to traffic. This is the last section of the Queensway to be completed.

Work progressed well on new Highway 403. A 6.3 mile section by-passing the City of Brantford was opened to traffic and work continued on another section up the escarpment in Hamilton, and through the southern section of Ancaster.

On the Queen Elizabeth Way, the widening to six lanes from Mississauga Road to the ninth line was finished, as was the Vineland Road Interchange. Fine progress was made on the major interchange at Ontario Street at St. Catharines.

The Thorold Tunnel construction continued with the contractor ahead of schedule

The Kitchener-Waterloo Expressway work was also ahead of schedule at year's end

Work proceeded well on the concrete deck of the Quinte Skyway.

In Northern Ontario work progressed favourably. By year's end there was at least a single course of hot mix pavement on Highway 11 from Atikokan to Fort Frances

The 87 mile section of Highway 101 between Chapleau and Wawa was completed and opened to traffic. On Highway 105 known as the Red Lake Road, grading and paving continued and by late summer 1967 the entire highway covering 112 miles will be paved. Work on new Highway 144 proceeded well, with a very large amount of work concentrated between Highway 101 and Gogama.

Work continued on the reconstruction of the Trans-Canada Highway between Ignace and English River. This section will be finished by mid-summer 1967.

Some of the most important work carried out in 1966-67 was as follows:

#### SOUTH-WESTERN AREA

##### Chatham, London, Stratford and Owen Sound Districts

During 1966 further progress was made in the elimination of grade crossings on the Macdonald-Cartier Freeway. An overpass on Kent County Road 16 and Interchange number 3 (Maidstone Town Line) were completed. Resurfacing between the Windsor entrance and the Puce River Road Interchange and between Wellington Road and Highway 4 was completed. Work was started on two fly-overs in Sandwich South Township, two in Southwold Township, two in Maidstone Township and Interchange number 4 at the Puce River Road (Essex County Road 8).

Resurfacing on Highway 2 was completed between Woodstock and Eastwood.

On Highway 3 Tunnelling work on the Simpson and Askew Drains was completed. Reconstruction on Highway 3 from nine miles west of Blenheim westerly was started.

Construction on Highway 4 progressed between Birr and Elginfield with the binder asphalt course being placed. Resurfacing between Lambeth and Highway 401 was completed. At Teeswater final trimming was completed on the Teeswater Bridge. The work of clearing commenced on grading, drainage, granular base and hot mix paving from Exeter north limits northerly 7.25 miles. A contract was begun late in 1966 from Highway 6 in Durham Easterly for 2.5 miles. A sharpe "S" curve under the C.P.R. railway will be eased by this reconstruction. Work was completed on the John Hanna Memorial Bridge in the town of Wingham.

On Highway 6 paving was completed from Hepworth to Wiarton.

Paving on Highway 7 was completed in the village of Rockwood. Work commenced on a grading, drainage, granular base and hot mix paving contract from Stratford south limits southerly for 6 miles.

Hot mix patching on Highway 8 was carried out from Kitchener west limits to Shakespeare. From Seeback Hill to Mitchell, also on the New Hamburg By-Pass resurfacing was completed.

On Highway 9 the Dredge Creek Structure and approaches at the west limits of the Town of Harrison were completed. At the intersection of Highways 9 and 27 a new diversion joining Highway 27 is underway, including a structure over a branch of the Schomberg River.

On old Highway 11 north of Barrie the Willow Creek Bridge was completed.

Reconstruction on Highway 18 was completed between Kingsville and Harrow using automatic screed controls for hot mix. Work was also completed through the hamlet of LaSalle, including a new bridge over Turkey Creek.

On Highway 23 with the exception of trimming and top course paving, work was completed from one mile south of Monkton to Newry. This work included extensive widening, storm sewers and curb and gutter work throughout the Village of Monkton.

On Highway 24A the approaches and structure over the New York Central Railway, 5.6 miles north of Simcoe were completed.

On Highway 26 and 27 from Barrie to Midhurst a late call contract was awarded for Clearing, Grubbing and Fencing. A new structure will be built over Willow Creek north of the intersection. The Highway will be widened from two lanes to four. Work commenced on a diversion of Highway 27 north of Schomberg.

Work progressed on Highway 59 on the structure and approaches over both the Canadian Pacific Railway and Thames River at Woodstock.

Highway 70 a newly-assumed highway was resurfaced from Owen Sound to the connecting County Road at Hepworth.

On Highway 77 between Staples and Highway 98 reconstruction including the laying of a 22 foot wide 7 inch deep concrete pavement was completed.

Highway 81 from Highway 7 southerly for 7.22 miles was the site for an experiment in paving a minor highway with seven inches of unreinforced concrete 22 feet wide over a minimum depth of Granular "A" on a clay grade.

Work on Highway 86 was completed on grading, drainage and granular base from 5.8 miles east of Elmira to Highway 7. Resurfacing was completed from Dorking to 1.2 miles west of Tralee and from Molesworth westerly to County Road number 12.

Highway 89 from Cookstown to Alliston was resurfaced. Paving on Highway 97 from Plattsville to the Oxford-Waterloo County Line was completed. This included reconstruction through Plattsville to Urban standards.

The first hot mix paving course on Highway 91 from Stayner to Duntroon was finished by mid fall.

On Highway 126 the overpass structure and grading at the Second Concession was completed.

Intersection improvement on Highway 136 was carried out in the Village of Alton.

Work on an underpass on Highway 400 at Vincent St. in Barrie progressed favourably.

#### CENTRAL AREA

##### Toronto, Hamilton and Port Hope Districts

On the Macdonald-Cartier Freeway reconstruction of the Toronto By-pass proceeded favourably. A contract for the reconstruction of the By-pass from Kipling Avenue to the west end of Dixon Road-Martingrove Road Interchange was awarded at year's end. Grading, drainage, structure and paving of Interchange at Bennett Road was completed.

On the Q.E.W. two very large contracts were advertised, with award in April 1967. These will set the stage for the major reconstruction at the Interchange at Highway 27. This interchange will form part of the Highway 27, Highway 401 Collector-Distributor Freeway to By-pass Toronto.



The Vineland Interchange and a short section of south service road at Kelson Avenue were completed. The deck of the south bound structure over the Michigan Central Railway 5 miles north of Fort Erie was replaced. Reconstruction was started on the extension at Falls Avenue to channelize the traffic in the vicinity of the Rainbow Bridge Plaza. The widening to six lanes from Mississauga Road to the ninth line was completed. Good progress was made on the interchange at Ontario St. in St. Catharines.

Construction of the Highway 400 extension South of Highway 401 to Jane St. was completed and opened to traffic.

Widening of Highway 2 from Whitby to Oshawa was virtually completed, while reconstruction started from Sheppard Avenue easterly. Work was commenced on a new structure over the Grand River at Paris, also a structure and approaches for one mile over the Trent River in the town of Trenton, a short distance north of Highway 2.

On Highway 3 six miles of 4 lane construction from Fort Erie westerly is expected to be completed early next year.

Highway 5 the Waterdown Bridge was completed.

On Highway 8 under the connecting link agreement the intersection of Highways 2 and 8 in the City of Hamilton, Main Street West was reconstructed. Grading south of St. Davids commenced for the replacement of the C.N.R. Subway.

The Highway 8 section of the Kitchener-Waterloo Expressway progressed well, and was ahead of schedule the end of the year. A contract was awarded for reconstruction on Highway 8 between Stoney Creek and Winona.

On Highway 9 the initial contract was awarded for construction from Highway 400 to Highway 27. This contract was for the relocation of the Holland Marsh drainage canal and was preliminary work for the construction of the highway in the location of the old canal. A section from Highway 11 to Highway 400 was completely reconstructed.

Highway 10 from Brantford to Victoria was widened to four lanes and four lane reconstruction commenced from north of Highway 401 southerly to Burmanthorpe Road.

Hot Mix Paving on Highway 12 at the junction of Pelham Road in Fonthill was completed.

On Highway 24 under the Connecting Link Agreement in the City of Brantford from Eastbourne Avenue to the North City Limits was reconstructed. The channelization was completed at the junction of Brant County Road 23. Work was started on 9 miles of resurfacing south of Brantford.

Granular Base on Highway 24A was placed in preparation of the concrete paving from Scotland to Highway 53. Under the Connecting Link Agreement reconstruction in Paris from Emily Street to the north Town limits started.

On Highway 28 the interchange work at Highways 28 and 115 progressed well, while work commenced on grading, drainage and hot mix paving from S. Monaghan northerly for 1.8 miles and for 1.4 miles over Trent Canal at Young's Point also two structures over the Trent Canal and Perry Creek Burleigh Falls North.

Resurfacing on Highway 33 was completed from Wellington to Hillier.



On Highway 46 grading, drainage and granular base from Highway 505 Easterly for 9.4 miles was completed, and the reshaping for hot mix paving was started.

On Highway 48 grading, drainage and culverts from Port Bolster Easterly for 4.9 miles was completed.

On Highway 49 grading, drainage and granular base from Roblin Mills northerly for 3.6 miles was completed and the concrete paving was started.

Construction on Highway 58 of 1.25 miles from Collier Road to the west portal of the Thorold Tunnel was well advanced by the end of the construction season. A large reconstruction contract covering widening of Highway 122 from Highway 2 northerly to the Queen Elizabeth Way was started.

On Highway 403 a 6.3 mile section by-passing the City of Brantford was opened to traffic. Work continued up the escarpment in Hamilton, and a contract was awarded on the next 3.5 mile section from Mohawk Road westerly, adjacent to Ancaster.

On Highway 503 grading, drainage, culverts and paving of approaches to the new lift locks over Trent Canal north of Kirkfield were completed.

The major tunnel contract under the Welland Canal at Thorold proceeded favourable on schedule.

#### EASTERN AREA

##### Kingston, Ottawa and Bancroft Districts

On the Macdonald-Cartier Freeway construction on the last four-lane section between Gananoque and Brockville on a completely new alignment is now well underway. On three large grading contracts carried over from last year between Gananoque and Lansdowne, two were completed and the third was advanced sufficiently to permit the starting of paving. Good progress was made on this new contract for Granular Base and paving between Gananoque and Ivy Lea. This contract incorporates the use of deep strength asphalt. East of Ivy Lea another large grading contract was completed except for a short length at a structure. The last and largest grading contract was awarded in the late summer. Substantial progress was made particularly on the very large item for rock excavation. Three grading contracts from Iroquois to Aultsville Road, westbound lanes, were completed. The laying of concrete pavement on this section was started, and approximately 5 miles from Iroquois easterly was completed using a 24' paver, which lays the full width of concrete pavement in one operation. When finished this section will complete the paving of Highway 401 in the Ottawa District.

In addition to the above several new interchange and flyover structures were either completed or under construction on Highway 401 in the Eastern Region.

Ottawa Queensway work was carried out from O'Connor St. to Alta Vista Drive. This section was opened to traffic in the Fall of 1966. This is the last section of new construction and apart from minor trim work the Queensway is completed.

On Highway 2, a structure over Grays Creek at the east limits of Cornwall was completed and opened to traffic.

Trans Canada Highway 7. The grading of the Madoc By-pass was completed and work began on a new Granular Base and Paving contract.

On Highway 7 and 15, a contract for Grading, Storm Sewers, Curb, Sidewalks and Paving through the Village of Bells Corners and reconstruction of the C.P.R. subway 1.0 miles west of Bells Corners is near completion.

On Highway 7B and 29, a contract for Grading, Drainage and Hot Mix Paving through Carleton Place and at Almonte was completed.

Resurfacing was carried out on Highway 17 from Wendover to Plantagenet. Under this contract extensive repairs were made to the Nation River Bridge. Grading and Hot Mix Paving were completed from Antrim to Highway 29.

On Highway 29 Resurfacing and minor grading work was started in the Fall and is expected to be completed during the summer of 1967.

A channelization on Highway 31 at Carleton County Road number 7 was completed and illuminated.

Grading and Hot Mix Paving were completed on Highway 41 from Griffith northerly for 6.16 miles. From Northbrook North limits to 1.8 miles north of Cloyne clearing was completed, and grading and culvert and granular base work was started.

The work of concrete paving the approaches and of placing the concrete deck of the Quinte Skyway was started in late summer and by years' end, about one third of the work was completed.

On Highway 60, the portion of road from Douglas to Highway 17 was completely reconstructed with the exception of Hot Mix Paving. Hot Mix Paving was completed from the junction of Highway 127 northerly for 9.86 miles.

Hot Mix Paving on Highway 62 from 0.3 miles north of St. Ola Road to 9.2 miles north of Junction of Highway 620 a distance of 4.5 miles. Good progress was made on a heavy grading contract from Combermere westerly to Purdy.

On Highway 133 concrete paving was placed from Highway 33 to Highway 401. This enabled a new structure over the railway at Erneston Station to be put into use.

Work on Highway 508 consisted of reconstruction of the bridge over the Constan Creek and construction of the Calabogie By-pass, together with alignment improvements carried out at three locations between Burnstown and Calabogie.

## NORTHERN AREA

Huntsville, Sault Ste. Marie, Sudbury, North Bay and New Liskeard

On Highway 11 widening to four lanes was extended from Severn River Bridge to the Kahshe Lake Road a distance of 4.4 miles. From Kahshe Lake Road to Gravenhurst reconstruction was commenced, widening this section of highway to four lanes. Resurfacing was carried out from 5.8 miles south of the junction of highways 11 and 64 northerly for 11.9 miles. A new structure at Severn River Bridge was nearly completed at year's end. Improvements at the South junction of Highway's 11 and 11B at Huntsville and at the junction of Highway 11 and the Golf Course Road on the Huntsville By-pass were completed.

Reconstruction at Desbarats on Highway 17 work was completed except for the Hot Mix Paving. Grading and Paving were completed from Section Highway 630 Easterly for 5.43 miles and from Bissetts Creek Westerly for 5.3 miles. From Laronde Creek to Sturgeon Falls, 9.75 miles and at the Cache Bay Road intersection with

Highway 17 approximately 2 miles west of Sturgeon Falls, Grading, Granular Base and Paving commenced. Most of the Granular Base was placed, with 2 miles receiving its first coat of pavement. From North Bay to Mattawa a distance of 37 miles has now been rebuilt to modern standards. Hot Mix Paving of a four lane section from Sutherland Ave. to Balsam St. in Copper Cliff a distance of 1.5 miles was completed. A new structure at Amable du Fond River was completed. Good progress was made on a very heavy rock reconstruction contract covering 11 miles from Montreal River southerly.

Grading and Paving on Highway 35 from Dorset Southerly for 7.2 miles was completed.

On Highway 64 Hot Mix Paving was completed from 0.5 miles South of Lavigne, Southerly for 5 miles.

In the late Fall an 8 mile Grading contract was awarded on Highway 67 from the South Junction of Highways 11 and 67 to the junction of Highways 67 and 610, and Clearing, Grubbing and Grading was carried out throughout the Winter.

Granular Base Course was placed on Highway 68 from La Cloche Island Channel to Goat Island Channel a distance of 7 miles.

On Highway 69, Grading, Drainage, Granular Base and Hot Mix Paving from Val Caron to Hanmer were completed. On various locations south of Sudbury an experiment with the installation of Styrofoam padding to provide protection against frost was carried out. These locations were sub-excavated and backfilled with clean granular material, insulated with Styrofoam panels to retard the frost penetration and resurfaced with hot mix. A system of thermo-couples was installed in these sections so that temperature readings can be taken periodically during the winter and spring to be compared with similar untreated areas. In addition to this, elevations are being taken periodically of control points to determine the amount of upheaval still being experienced. At Bala (Moon River) a new Structure and approaches have been completed. Paving will be done early in 1967. Resurfacing of Highway 69 south from Sudbury for approximately 11 miles was started and by year's end was about 50% completed.

The final 16 miles of the eighty-seven miles of Highway 101 from Wawa to Chapleau were completed and opened to traffic. This included two structures over the Kinniwab River and one structure over the Jackpine River. Granular Base and Paving from Matheson easterly for 9.3 miles, started in the late Spring was not completed owing to extreme wet weather conditions.

On Highway 103 Resurfacing was completed from the junction of Highway 6 Southerly to the junction of Highway 12.

A grading contract is in progress on Highway 118 from Port Carling to Milford including a structure at Brandy Lake. From Baysville westerly for 1.7 miles, a section was completed eliminating some very poor alignment.

Paving on Highway 124 from 1 mile south of McKellar southerly for 1.2 miles was completed.

On Highway 129 at Aubrey Falls approximately 6 miles of highway was completed and opened to traffic. A bridge over Mississagi River will be completed next year. Grading commenced on the 7 miles from Chapleau southerly.



Three grading contracts totalling 25 miles, including a bridge over the Tatachikapika River on Highway 144 were completed. Four additional grading contracts, plus the Granular Base Contract on one of the previously mentioned grading contracts were awarded and work was well advanced by the end of the year. One clearing contract was completed and two additional contracts were awarded and were near completion by the end of the year.

On Secondary Highway 542 a concrete structure and 0.5 miles of grading and Granular Base were finished.

Reconstruction of Secondary Highway 556 from Secondary Highway 552 northerly to Searchmont was carried out, including hot mix paving.

A grading contract on Secondary Highway 576 on the northerly 7.6 miles which leads from Highway 101 to the Kam Kotia Mine was completed and the contract for the southerly 7.9 miles was awarded with the work well advanced before the winter shut down.

Reconstruction of Secondary Highway 614 continued with a stretch of the Highway from the town of Manitouwadge southerly for 8 miles being opened to traffic.

On Secondary Highway 632 a new structure and approaches were completed at the Joseph River.

A concrete structure on Secondary Highway 634, 9.5 miles west of Val Caron was completed, while other structure, grading and paving work continued.

Granular Base and Paving on Secondary Highway 650 from Highway 112 to the Adams Mine were completed.

Work was started on Secondary Highway 651 northerly from Highway 101 to Dalton with work commencing on the first 9 miles of road leaving approximately 8 miles of this road to be completed during next years construction season.

The paving of Secondary Highway 655 from Highway 101 to the Texas Gulf Mine was completed.

#### NORTH-WESTERN AREA

##### Cochrane, Fort William and Kenora Districts

On Highway 11 all grading, drainage, granular base and hot mix paving were completed from Moonbeam to Fauquier. Highway 11 west of the Town of Atikokan was completely paved to the District boundary at the Seine River, greatly improving this important scenic road link between Fort Frances and the Lakehead. Paving was completed from Longlac westerly for 14.22 miles. Paving was started from the Seine River westerly for 38.69 miles. Work on this section is scheduled for completion early in 1967. Grading, granular base and paving was almost complete from Emo to Barwick at the close of the construction season. In 1966 the Seine River Bridge was the subject of an award, sponsored by the Department of Industry and the National Design Council in association with the Canadian Steel Industries Construction Council. A right-of-way clearing contract between 55 and 75 miles west of Hearst which was to be completed early in 1966 was delayed due to hazardous fire conditions in the summer. An additional close cut clearing contract was started from 74 to 94 miles west of Hearst and is expected to be completed in June 1967.

Work continued on the reconstruction of Trans-Canada Highway 17 between



Ignace and English River. Structure and grading work proceeded well on Highway 17 from the Mackenzie River northerly for 3 miles.

Grading on Highway 71 from Nestor Falls southerly for 8.3 miles was completed and paving started before the close of the construction season. Grading of a further 9.1 miles commencing 9.0 miles south of Nestor Falls was started with the completion scheduled for 1967.

On Highway 72 grading was completed from the junction of Highway 17 northerly for 12.8 miles and approximately 75 per cent complete on the next 13 miles northerly at the end of the construction season.

Grading and paving on Highway 105 is now completed to 37 miles south of Ear Falls. From 37 miles south of Ear Falls to the junction of Highway 17 grading was completed and paving started on 16 miles. Grading was well underway on the remaining 10 miles. All work will be finished by mid summer of 1967, and the Red Lake Road will be completely paved from Vermillion Bay to the Town of Red Lake.

The Lakehead Expressway encompassing the Twin Cities of Port Arthur and Fort William was started with the construction of a short section between Highways 130 and 17A.

On Secondary Highway 574 the construction of a Bailey Bridge and approaches over the Abitibi River, 8.0 miles east of Cochrane were completed and opened to traffic.

Grading, drainage and granular base were completed for 0.37 miles at Jacob's Creek on Secondary Highway 578.

A grading, drainage and granular base contract on Secondary Highway 581 from Highway 11 north to Remi Lake was awarded during the winter months and will be completed next year.

Secondary Highway 628 from the Trans-Canada Highway into Red Rock townsite was completely reconstructed and paved.

A grading, drainage and granular base contract on Secondary Highway 631 from Hornepayne to 6.72 miles south was to be completed in 1966, but due to adverse weather conditions will be completed next year. Work began on an additional 7.2 miles of grading, drainage and granular base and a structure over the Shekak River 6.7 miles south of Hornepayne. A clearing contract from 15 miles to 28 miles south of Hornepayne was completed.

SUMMARY OF NEW SECTIONS OF KING'S HIGHWAYS  
Completed During Fiscal Year 1966-67

NEW 4 LANE ROADS		MILES
HWY. No.	LOCATION	
2	Oshawa to Whitby.....	2.4
3	Fort Erie westerly.....	6.7
4	Elginfield southerly.....	4.2
11	Severn Bridge to Kashe Lake Road.....	4.4
400	Hwy. 401 to Jane Street.....	1.0
403	Brantford By-pass.....	6.3
Ottawa		
Queens-		
way	West of Alta Vista Drive.....	0.8
TOTAL.....		25.8

NEW 2 LANE ROADS		
Hwy. No.	LOCATION	MILES
7	Madoc By-pass .....	3.5
46	Hwy. 35 westerly.....	9.4
70	Owen Sound to Hepworth.....	7.0
77	Hwy. 98 to Staples .....	5.4
101	Between Chapleau and Wawa.....	16.0
129	Mississagi River southerly.....	6.7
144	South from Hwy. 101.....	25.0
144	North of Benny .....	6.0
TOTAL .....		79.0

NEW BRIDGES COMPLETED IN 1966-67

During the fiscal year, 76 new bridges were completed.

MAINTENANCE DIVISION

E. J. Orr, P.Eng., Maintenance Engineer

DEPARTMENT'S CRUSHING PLANT

The Department crusher, working in the Fort William District, produced 28,071 tons of sand and stone, and 135,188 tons of granular 'A' material, which was stockpiled near Raith on Highway 17 in preparation for a grading and paving job in 1967. In addition, the crusher also produced 8,590 tons of 3/8" crushed gravel which was stockpiled for future Maintenance requirements.

MULCH PAVEMENT

Mulch pavement, mixed and laid by Department forces, totalled 75.9 miles in the following Districts.

Port Hope.....	2.5 miles
Huntsville.....	17.6 "
North Bay.....	21.0 "
New Liskeard.....	30.8 "
Sault Ste. Marie.....	4.0 "
75.9 miles	

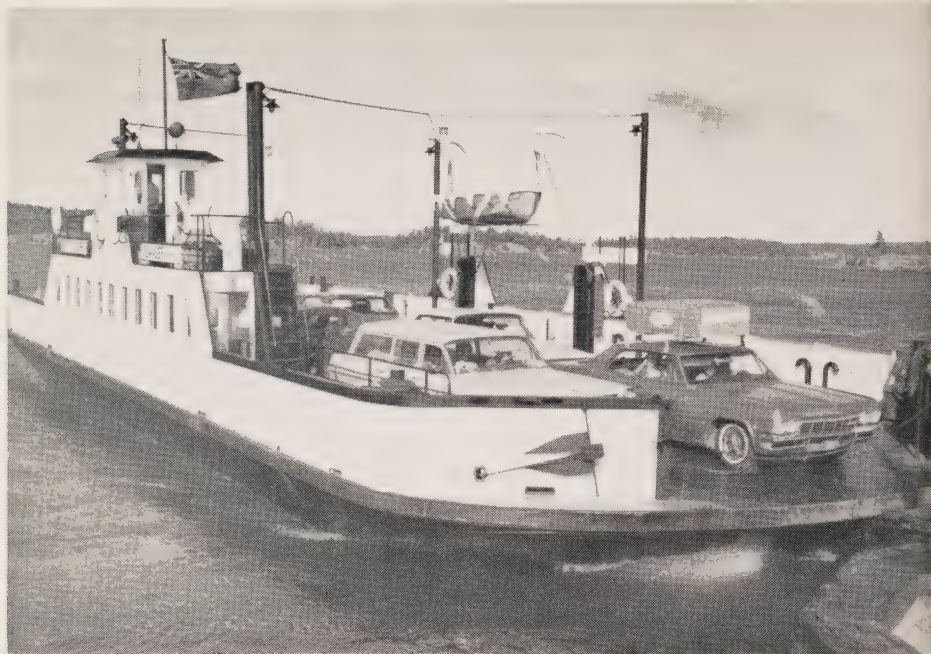
ZONE PAINTING

Our 10 dual and 11 single zone striping machines painted 11,347 miles of Kings and Secondary Highways, plus 18 miles of County Roads. The Department established a policy of using yellow traffic paint for edge lining our highways at certain locations with the result that 1,964 miles of yellow edge line was also applied.

Our zone striper replacement program resulted in two machines of our latest design being completed and sent to Owen Sound and Ottawa. These new machines incorporated several major improvements over the older type equipment. They are dual machines capable of painting both yellow and white markings from the right or left side and the men at the rear of the unit are now located in less hazardous positions upon the truck platform.

SIGNS

During the year, District forces manufactured and erected 110,105 signs varying from



The St. Joseph Islander. Photo 8490—(Operations Branch, Maintenance Division)

fingerboards curve and stop signs to the large cantilever and overhead aluminum signs.

#### WEIGH SCALES

Three new weigh scales were installed in 1966 at the following locations:

District 9: One installation with two 30 tons 10' x 12' axle load scales located between Highways 2 and 401 just east of Lancaster designed to accommodate both Highways.

District 19: Highway 17, 1 mile west of junction of Highway 130—30 ton 10' x 12' axle scale.

#### WINTER MAINTENANCE

The winter of 1966-67 brought heavier than normal snowfall and more frequent snowstorms to most Districts of the province. This increased our plowing operations and required the use of approximately 1,000,000 tons of abrasives and 290,000 tons of de-icing chemical in our winter maintenance operations.

Our Winter Works Programme resulted in the Districts carrying out such projects as clearing, grubbing, rock excavations, tree trimming and removal and developing and improving roadside picnic parks.

#### FORESTRY AND LANDSCAPE SECTION

The planting of 96,464 trees and shrubs was carried out in sixteen districts for the purposes of general roadside improvement, roadside rest areas, and the landscaping of



headquarters buildings. A considerable number of semi-mature shade trees were planted in the establishment of picnic areas related to Service Centres.

The normal tree planting was augmented by the use of the Department's "Tree Saver" machine to relocate large trees prior to construction. A total of 746 trees were relocated in eight southern districts.

Grass seeding operations to establish growth on new grade and special erosion control problem areas totalled 20,071,480 square yards. Approximately 50 percent of this work was carried out by contract.

With the implementation of more weed spray machines having the advantage of the new hydraulic, articulated boom, over 11,500 miles were sprayed throughout eighteen districts. Soil sterilant chemicals are getting more extensive use in the control of unwanted growth around guide rail and signs, resulting in improved shoulder maintenance.

In the southern districts, forestry crews removed 12,630 trees to safeguard the travelling public. Utility companies were granted permission to remove 841 trees in the maintenance of their lines. Contracts were let for mechanical removal of over 7,900 stumps to facilitate mowing and improved appearance.

## INSPECTION AND MAINTENANCE OF BRIDGES

**W. D. Birch—Bridge Maintenance and Inspection Engineer**

During 1966, approximately one third of all structures on main highways and secondary roads were inspected by the staff of the Bridge Maintenance Section. The District Engineers were advised of necessary repairs and to formulate a maintenance programme. The Programme and Planning Engineers were advised when replacements would be necessary.

The Bridge Inspection and Maintenance Section designed thirty-five temporary detour structures consisting of Bailey Bridges. A few minor permanent structures were also built by district day labour forces and many small bridges were replaced by structure plate pipe culverts. Twenty structurally unsound bridges were replaced or reinforced by the use of bailey bridging.

A policy of waterproofing bridge decks under hot laid asphalt was continued and all decks under repaving contracts were repaired and waterproofed by means of hot rubberized ductile asphalt or an emulsion membrane.

Sixteen underwater bridge piers or foundations were investigated by qualified divers and repairs were initiated following this inspection.

Existing bridges were reinforced to accommodate extremely heavy loads at Ear Falls Dam on Highway 105 and at the Mississagi River on Highway 129.

The temporary ferry dock at Dawson Point on Wolfe Island was rebuilt with concrete to extend its life for low water and winter operation.

Painting of 28 bridges and 30,000 lineal feet of handrail was done mostly by Contract. A small amount of handrail was painted by district forces in Toronto, Port Hope, Owen Sound, Huntsville, Chatham, London and Cochrane District.

Various municipalities were aided in assessing structural maintenance problems involving safety and replacement.



## HIGHWAY LIGHTING

### Installations Put into Operation

April 1, 1966—April 1, 1967

#### DISTRICT 1—CHATHAM

- 1-2-98-42 Hwy. 2 and 98, (43) 460-watt mercury vapour unit.
- 1-18-44 Hwy. 18 and Front Rd. at LaSalle, (5) 400-watt mercury vapour Type II.
- 1-3B-50 Hwy. 3B and 3rd Concession, (2) 400-watt mercury vapour Type II.
- 1-3B-51 Hwy. 3B and Grand Marais Rd., Windsor,  
(2) 400-watt mercury vapour Type II.
- 1-39-2-54 Hwy. 39 and Hwy. 2 Twp. of Rochester, (3) 400-watt mercury vapour Type II.
- 1-7-40A-59 Hwy. 7 at Hwy. 40A—Modland Rd., Sarnia,  
(5) 460-watt mercury vapour units.
- 1-3-63 Hwy. 3 Malden Rd. to Tecumseh Blvd., (19) 400-watt mercury vapour Type II.
- 1-18-64 Hwy. 18, Turkey Creek Bridge, (5) 460-watt mercury vapour units.
- 1-40A-72 Hwy. 40A and Indian Line Rd., (5) 400-watt mercury vapour Type II.
- 1-39-78 Hwy. 39 at Lauzon Rd., Windsor, (2) 460-watt mercury vapour Type II.
- 1-7-79 Hwy. 7 from Modeland Rd. east 1.2 mi., (30) 400-watt mercury vapour  
Type II Volt 230; (40) 400-watt mercury vapour Type II Volt 115.
- 1-40-80 Hwy. 40, Plank Rd., Sarnia, (2) 460-watt mercury vapour units.
- 1-3-82 Hwy. 3 and County Rd. 15, (4) 460-watt mercury vapour units.
- 1-18-83 Hwy. 18 at Essex County Rd. 4 West of Harrow,  
(4) 460-watt mercury vapour units.
- 1-21-85 Hwy. 21, Pinery Park, (8) 400-watt mercury vapour Type II.
- 1-3-87 Hwy. 3 at Oak St. and Fraser Rd., (5) 460-watt mercury vapour units.
- 1-3-88 Hwy. 3 and Walker Rd. Oldcastle-Windsor Area,  
(2) 400-watt mercury vapour Type II.
- 1-3-91 Hwy. 3 and Stevenson Rd., (6) 460-watt mercury vapour units.

#### DISTRICT 2—LONDON

- 2-74-55 Hwy. 74, Belmont, (2) 400-watt mercury vapour units.
- 2-24-60 Hwy. 24 and 24A, (4) 400-watt mercury vapour units.
- 2-3-95 Hwy. 3 and Cedar St., Simcoe, (3) 400-watt mercury vapour units.

#### DISTRICT 3—STRATFORD

- 3-8-29 Hwy. 8, Village of Dublin, (8) two tube fluorescents.
- 3-4-59 Hwy. 4, Hamlet of Kippen, (5) 48" fluorescents.
- 3-4-60 Hwy. 4, Centralia Jct., Huron County Rd. 36, (1) 250-watt mercury vapour.

#### DISTRICT 4—HAMILTON

- 4-Q.E.W.-22 Q.E.W. at Lake St. Interchange, (6) 460-watt mercury vapour units.
- 4-403-84 Hwy. 403 and Ewing Dr., City of Brantford, (7) 460-watt mercury vapour units.
- 4-403-89 Hwy. 403 and N. Park St., City of Brantford,  
(10) 460-watt mercury vapour units.
- 4-403-104 Hwy. 403 and Park Rd., City of Brantford, (16) 460-watt mercury vapour units.
- 4-403-185 Hwy. 403 and West St., City of Brantford, (12) 460-watt mercury vapour units.
- 4-Q.E.W.-207 Q.E.W. and County Rd. 22 at Vineland, (12) 460-watt mercury vapour units.
- 4-Q.E.W.-218 Q.E.W. and Ontario St., St. Catharines, (28) 460-watt mercury vapour units.
- 4-20-292 Hwy. 20 and Lincoln County Rd. 22, (2) 460-watt mercury vapour units.
- 4-403-296 Hwy. 403 and Johnson Rd., (2) 460-watt mercury vapour units.
- 4-403-297 Hwy. 403 and Garden Ave., (2) 460-watt mercury vapour units.
- 4-403-298 Hwy. 403 and Henry St., (2) 460-watt mercury vapour units.
- 4-Q.E.W.-38 Hwy. 25 west of Q.E.W., Burlington, (1) 450-watt mercury vapour unit.
- 4-6-200 Hwy. 6, Alderle Ave. to Leaming Rd., (12) 460-watt mercury vapour units.
- 4-3-181 Hwy. 3 and Ridgeway, (2) 460-watt mercury vapour units.
- 4-406-98 Hwy. 406 Ramp to Geneva St., (16) 460-watt mercury vapour units.
- 4-Q.E.W.-403-141 Hwy. 403 and Q.E.W., (19) 460-watt mercury vapour units.

## DISTRICT 5—OWEN SOUND

- 5-400-21 Hwy. 400 at St. Vincent St., (4) 67-watt mercury vapour lamps;  
(1) 150 lamp.
- 5-6-70-51 Hwy. 6 and 70 and County Rd. 8, Village of Hepworth,  
(5) 400-watt mercury vapour lamps.
- 5-90-56 Hwy. 90, Village of Angus, (9) 400-watt mercury vapour lamps.
- 5-26-49 Hwy. 26 at Thornbury, (2) 400-watt mercury vapour lamps.
- 400-4 Hwy. 400, Service Centre, (16) 400-watt mercury vapour lamps.

## DISTRICT 6—TORONTO

- 6-Q.E.W.-2 Q.E.W. and Hwy. 27 interchange, (9) 400-watt mercury vapour units.
- 6-Q.E.W.-10 Q.E.W. at Mississauga Rd., (30) 400-watt mercury vapour units.
- 6-Q.E.W.-11 Q.E.W. and Lorne Park Ave., (9) 400-watt mercury vapour units.
- 6-401-34 Hwy. 401 at Don Valley Parkway, (57) 700-watt mercury vapour units;  
(113) 400-watt mercury vapour units; (166) 2 lamp 4' 200-watt fluorescent  
fixtures.
- 6-7-59 Hwy. 7 and 11, Langstaff, (2) 400-watt mercury vapour units.
- 6-7-64 Hwy. 7 and 10 Brampton by-pass, (1) 400-watt mercury vapour unit.
- 6-401-68 Hwy. 401 and Liverpool Rd., (1) 400-watt mercury vapour unit.
- 6-401-79 Hwy. 401 and Victoria Park, (28) 400-watt mercury vapour units;  
(20) 2 lamp 4' 200-watt fluorescent fixtures.
- 6-401-93 Hwy. 401 and Leslie St. South, (34) 700-watt mercury vapour units;  
(38) 400-watt mercury vapour units.
- 6-401-95 Hwy. 401 and Weston Rd., (16) 1,000-watt mercury vapour units;  
(48) 400-watt mercury vapour units.
- 6-401-96 Hwy. 401 at Hogg's Hollow Bridge, (42) 400-watt mercury vapour units;  
(2) 700-watt mercury vapour units.
- 6-10-124 Hwy. 10 at Etobicoke Creek, (2) 400-watt mercury vapour units.
- 6-400-136 Hwy. 400 at Sheppard Ave. West, (15) 400-watt mercury vapour units;  
(14) 400-watt mercury vapour units.
- 6-50-143 Hwy. 50 at Albion Hills, (3) 400-watt mercury vapour units.
- 6-2-147 Hwy. 2 and Thickson Rd. (Whitby), (2) 400-watt mercury vapour units.
- 6-27-161 Hwy. 27 and County Rd. 7 County of York,  
(5) 400-watt mercury vapour units.
- 6-12-183 Hwy. 12 and County Rd. 12—Beaverton by-pass,  
(3) 400-watt mercury vapour units.
- 6-48-12-184 Hwy. 12 at Hwy. 48, Beaverton by-pass, (3) 400-watt mercury vapour units.
- 6-27-192 Hwy. 27 at Rexdale Blvd., (2) 400-watt mercury vapour units.
- 6-27-50-193 Hwy. 27 and Hwy. 50 at Albion Rd., (2) 400-watt mercury vapour units.
- 6-7-194 Hwy. 7 and Brock Rd., Brougham, (2) 400-watt mercury vapour units.
- 6-2-195 Hwy. 2 and Liverpool Rd., (2) 400-watt mercury vapour units.
- 6-11-11B-203 Hwy. 11 and Hwy. 11B, Holland Landing, (6) 400-watt mercury vapour units.
- 6-7-205 Hwy. 7 at Jane St., (2) 400-watt mercury vapour units.
- 6-0-301 Hwy. 401 at Don Valley Pkwy. W/B, (12) 400-watt mercury vapour units.
- 6-0-301 Hwy. 401 at Don Valley Pkwy. E/B, (9) 400-watt mercury vapour units.
- 65-239 Hwy. 400 at Jane St., (57) 400-watt mercury vapour units.
- 65-263 Hwy. 401 at Kipling Ave., (4) 400-watt mercury vapour units.
- 65-263 Hwy. 401 at Islington Ave., (2) 400-watt mercury vapour units.

## DISTRICT 7—PORT HOPE

- 7-30-67 Hwy. 30, Village of Orland, (7) 400-watt mercury vapour units.
- 7-30-68 Hwy. 30, Village of Codrington, (9) 400-watt mercury vapour units.
- 7-7A-80 Hwy. 7A, Hamlet of Nestleton, (13) 400-watt mercury vapour units.

## DISTRICT 8—KINGSTON

- 8-401-77 Hwy. 401 at Edward Street, (13) 400-watt mercury vapour units.
- 8-401-84 Hwy. 401 at Entrance to Thousand Island Bridge,  
(56) 400-watt mercury vapour units.
- 8-2-41-27 Hwy. 2 from Hwy. 502 to Palace Rd. east limits, Napanee,  
(6) 400-watt mercury vapour units.

## DISTRICT 9—OTTAWA

- 9-2-4 Hwy. 2 and 31, Morrisburg, (15) 400-watt mercury vapour units.  
 9-17-19 Hwy. 17 at Village of L'Orignal, (6) 400-watt mercury vapour units.  
 9-17-44-21 Hwy. 17 and 44, Huntley, (3) 400-watt mercury vapour units.  
 9-17-27 Hwy. 17 and Windover Rd., (4) 400-watt mercury vapour units.  
 9-17-29-31 Hwy. 17 and 29, Arnprior, (3) 400-watt mercury vapour units.  
 9-17-34-32 Hwy. 17 and 34, Hawkesbury, (8) 400-watt mercury vapour units.  
 9-7-7B-33 Hwy. 7 and 7B, west of Carleton Place, (14) 400-watt mercury vapour units.  
 9-17-37 Hwy. 17 T.C.H. east of Rockland, (3) 400-watt mercury vapour units.  
 9-17-44 Hwy. 17 T.C.H. west of Rockland, (5) 400-watt mercury vapour units.  
 9-7-15-52 Hwy. 7 and Hwy. 15 at Stittsville Station Rd.,  
 (3) 400-watt mercury vapour units.  
 9-17-60 Village of Carp, 2 C.H. Hwy. 17 west, (3) 400-watt mercury vapour units.  
 9-17-62 Hwy. 17 and Blair Rd., (18) 400-watt mercury vapour units.  
 9-7-15-65 Hwy. 7 and 15, Bells Corns., (9) 400-watt mercury vapour units.  
 9-17-72 Old Hwy. 17, Village of Plantagenet, (8) 400-watt mercury vapour units.  
 9-401-83 Hwy. 401 at Carman Rd., (13) 400-watt mercury vapour units.  
 9-7-84 Hwy. 7 and Lanark Rd., (5) 400-watt mercury vapour units.  
 9-31-94 Hwy. 31 Metcalfe Rd., (4) 400-watt mercury vapour units.  
 9-16-104 Hwy. 16 and County Rd. 13, Twp. of Nepean,  
 (3) 400-watt mercury vapour units.  
 9-Q-9 Hwy. 17E T.C.H. and Old 17 Montreal Rd.,  
 (135) 400-watt mercury vapour units.  
 9-Q-9 Hwy. 17E T.C.H. and St. Laurent Blvd., (28) 400-watt mercury vapour units.  
 9-Q-9 Hwy. 7 and 15 Queensway West, (59) 400-watt mercury vapour units.  
 9-29-7B-47 Hwy. 29 and 7 Carleton Place, (16) 400-watt mercury vapour units.  
 9-2-99 Force Rd. and Hwy. 2, (3) 400-watt mercury vapour units.  
 9-17-110 Hwy. 17W and 62, (11) 400-watt mercury vapour units.  
 9-31-112 Manotick Side Rd. 7 and Hwy. 31, (5) 400-watt mercury vapour units.  
 E-11 Service Centre Hwy. 401, (15) 400-watt mercury vapour units.

## DISTRICT 10—BANCROFT

- 10-28-62-5 Hwy. 28 and Hwy. 62, Village of Bancroft, (25) 48" 250-watt fluorescent.  
 10-28-16 Hwy. 28 and Bancroft, (40) 200-watt mercury vapour units.  
 10-60-17 Hwy. 60, Village of Whitney, (6) 400-watt mercury vapour Type II.  
 10-648-20 Hwy. 648, Village of Harcourt, (6) 400-watt mercury vapour Type II.  
 10-121-503-21 Hwy. 121 and Hwy. 503, Village of Kinmount,  
 (22) 175-watt mercury vapour units.  
 10-121-503-24 Hwy. 121 and 503 at Tory Hill, (11) 48" 250-watt fluorescent.  
 10-648-25 Hwy. 648 at Wilberforce, (17) 48" 250-watt fluorescent.

## DISTRICT 11—HUNTSVILLE

- 11-11-13 Hwy. 11 at Severn Bridge, (2) 400-watt mercury vapour units.  
 11-103-501-31 Jct. 103 and 501, Twp. of Baster, (2) 400-watt mercury vapour units.  
 11-632-47 Hwy. 632 Joseph River Bridge, (4) 100-watt navigation lights.  
 11-118-527-49 Hwy. 118 and 527, (1) 400-watt mercury vapour unit.  
 11-69-103-51 Hwy. 69 and 103, (5) 400-watt mercury vapour units.

## DISTRICT 13—NORTH BAY

- 13-11-36 Hwy. 11 and Sherman Mine, (7) 400-watt mercury vapour units.

## DISTRICT 16—COCHRANE

- 16-574-17 Hwy. 574 at Abitibi River Bridge, (2) 175-watt mercury vapour units.

## DISTRICT 17—SUDBURY

- 17-68-i Hwy. 68 at C.P.R. Swing Br., Little Current,  
 (8) 400-watt mercury vapour Type II.  
 17-69-19 Hwy. 69 at Desmarais St., Ross Crns., (2) 400-watt mercury vapour Type II.

TRAFFIC SIGNALS

Installations Put into Operation

April 1, 1966—March 31, 1967

DISTRICT 1—CHATHAM

- 1-2-98-18 Hwy. 2 and 98 and Eugenie St., fully actuated.
- 1-39-19 Hwy. 39 and Lauzon Rd., fully actuated.
- 1-7-40A-46 Hwy. 7 at Hwy. 40A, Modland Rd., Sarnia, fully actuated.
- 1-98-47 Hwy. 98 at Cabana Rd. (Windsor), fully actuated.
- 1-40-48 Hwy. 40, Plank Rd., Sarnia, fully actuated.

DISTRICT 2—LONDON

- 2-3-19 Hwy. 3 and 24, fixed time.

DISTRICT 3—STRATFORD

- 3-8-4 Hwy. 8, Town of Preston, fixed time.
- 3-7-11 Hwy. 7 Jct. Waterloo County Rd., 13 Breslau, fully actuated.

DISTRICT 4—HAMILTON

- 4-Q.E.W.-1 Q.E.W. and Lake Ave., Stoney Creek, fully actuated.
- 4-3-17 Hwy. 3 and Ridge Rd., Ridgeway, fully actuated.
- 4-3-67 Hwy. 3 and North St. Plaza, Fort Erie, fully actuated.
- 4-3-68 Hwy. 3 and Central Ave. Plaza, Fort Erie, fully actuated.
- 4-3-69 Hwy. 3 and King St. Plaza, Fort Erie, fully actuated.
- 4-403-2-76 Hwy. 403 and 2 Brantford by-pass, fully actuated.
- 4-Q.E.W.-85 Q.E.W. and Lake St., St. Catharines, fully actuated.
- 4-3-98 Hwy. 3 and Concession Rd., Fort Erie, fully actuated.
- 4-20-125 Hwy. 20 and Pelham St. (Fonthill).

DISTRICT 5—OWEN SOUND

- 5-26-18 Hwy. 26 at Nottawasaga River Bridge, fixed time.
- 5-26-9 Hwy. 26 at Thornbury, fixed time.

DISTRICT 6—TORONTO

- 6-5-22 Hwy. 5 and Dixie Rd., fully actuated.
- 6-11-34 Hwy. 11 and 7 at Langstaff, fully actuated.
- 6-7-58 Hwy. 7, 10 and Brampton by-pass, fully actuated.
- 6-7-68 Hwy. 7 and Keele St., fully actuated.
- 6-5-75 Hwy. 5 and Cawthra Rd., fully actuated.
- 6-7-87 Hwy. 7 and Bathurst St., fully actuated.
- 6-11-97 Hwy. 11 at Davis Drive, semi-actuated.
- 6-7-111 Hwy. 7 and Dufferin St. Concord, fully actuated.
- 6-27-117 Hwy. 27 and Belfield Rd., Twp. of Etobicoke, fully actuated.
- 6-5-120 Hwy. 5 and Wharton Way, fully actuated.
- 6-2-124 Hwy. 2 and Liverpool Rd., Twp. of Pickering, fully actuated.
- 6-2-154 Hwy. 2 at Kendalwood-Garrard, Whitby, fixed time; fully actuated.
- 6-2-156 Hwy. 2 and Thickson Rd., fully actuated.
- 6-7-162 Hwy. 7 and Second Line Rd. (Chinguacousy Twp.), fixed time.
- 6-401-171 Hwy. 401 and Kennedy Rd., fixed time.
- 6-2-172 Hwy. 2 at Cumberland Dr., Port Credit, fixed time.
- 6-7-173 Hwy. 7 at Galdsworthy Dr., Markham, fully actuated.
- 6-7-174 Hwy. 7 at Jane St., fully actuated.
- 6-7-176 Hwy. 7 and Bathurst St. with Langstaff Ave., fully actuated.

DISTRICT 9—OTTAWA

- 9-401-3 Hwy. 401 and Hwy. 31 north, fully actuated.
- 9-2-4 Hwy. 2 and 31 Morrisburg, fully actuated.
- 9-7-15-8 Intersection of Hwys. 7 and 15 and Lynhard Rd., fully actuated.
- 9-7-15-9 Intersection of Hwys. 7 and 15 and Richmond St., fully actuated.
- 9-17-11 Hwy. 17 at Main Entrance to Camp Petawawa, fully actuated.
- 9-17-16 Hwy. 17, Blair Rd., Skead Rd., Ogilvy Rd., fully actuated.



**DISTRICT 16—COCHRANE**

16-574-3 Hwy. 574 at Abitibi River Bridge, fixed time.

**DISTRICT 11—HUNTSVILLE**

11-69-10 Hwy. 69, Bala, fixed time (temp.).

11-11B-11 Hwy. 11B and Centre St., Huntsville, fixed time.

**DISTRICT 13—NORTH BAY**

13-69-9 Hwy. 69, Temiskaming, fixed time.

**DISTRICT 17—SUDBURY**

17-68-3 Hwy. 68 at C.P.R. Wing Bridge, Little Current, fully actuated.

**SIGN LIGHTING****Installations Put into Operation**

**April 1, 1966—March 31, 1967**

**DISTRICT 4—HAMILTON**

4-Q.E.W.-403-17 Q.E.W. and 403 interchange, (1) 6 ft. fluorescent fixture.

4-403-2-28 Hwy. 403 and 2, Cainsville, (3) sign lights on keep right.

4-403-29 Hwy. 403 and Main St., Hamilton, (4) 6 ft. fluorescent fixtures.

**DISTRICT 6—TORONTO**

6-401-79 Hwy. 401 and Keele St., (2) 6 ft. fluorescent fixtures.

63-329 Hwy. 401 at Carhart Ave., (2) 6 ft. fluorescent fixtures.

65-239 Hwy. 400 at S/B Jane St. exit, (2) 8 ft. fluorescent fixtures.

65-179 Q.E.W. at 9th Line, (2) 8 ft. fluorescent fixtures.

65-29 Q.E.W. at Mississauga Rd., (8) 8 ft. fluorescent fixtures.

63-329 Hwy. 401 at Spadina interchange, (2) 8 ft. fluorescent fixtures.

63-158 Hwy. 401 at Jane St., (2) 8 ft. fluorescent fixtures.

65-56 Hwy. 401 at Don Valley Parkway, (154) 4 ft. single lamp on truss signs.

66-43 65-31 65-205 Hwy. 401 at Yonge St. to Victoria Pk.,

65-56 66-42 (124) 4 ft. single lamp on truss signs.

63-216 65-55 65-263 Hwy. 401 from Jane St. to Islington Ave., (18) 4 ft. single lamp on truss signs.

65-29 Q.E.W. from Mississauga Rd. to 9th Line, (20) 4 ft. single lamp on truss signs.

**DISTRICT 9—OTTAWA**

9-7-15-8 Hwy. 7 and 15 and Moodie Dr., (2) boulevard sign lights.

**DISTRICT 11—HUNTSVILLE**

11-121-35-4 Hwy. 35 and 121, (4) 8 ft. fluorescent fixtures.

**DISTRICT 13—NORTH BAY**

13-11-4 Hwy. 11 and Sherman Mine, (4) incandescent on warning sign.

## FLASHING BEACONS

## Installations Put into Operation

April 1, 1966—March 31, 1967

## DISTRICT 1—CHATHAM

- 1-2-98-31 Hwy. 2 and 98 at Windsor, (1) amber on warning sign.  
 1-3-43 Hwy. 3 Stevenson Rd., (2) amber on warning sign.

## DISTRICT 2—LONDON

- 2-23-50 Hwy. 23 at Listowel, (4) flasher signals.  
 2-83-51 Hwy. 83 west of Exeter, (2) amber flasher signals.  
 2-8-52 Hwy. 8, Seaforth, (12) flasher signals.  
 2-7-53 Hwy. 7, Stratford, (2) flasher signals.

## DISTRICT 4—HAMILTON

- 4-403-2-117 Hwy. 403 and Hwy. 2, west of Brantford, (1) amber flasher signal.  
 4-Q.E.W.-121 Intersection of Q.E.W. and Ontario St., (2) amber flasher signal.  
 4-403-122 Hwy. 403 and Park St. Brantford, (2) amber flasher signal.  
 4-403-123 Hwy. 403 and Concession Twp., (2) amber flasher signal.  
 4-403-124 Hwy. 403 and Henery on 403 west, (1) amber flasher signal.

## DISTRICT 5—OWEN SOUND

- 5-89-6 Hwy. 27 and 89 Cookstown, reconstructed red stop flasher.  
 5-89-10 Hwy. 89, Alliston, (1) red stop flasher.  
 5-24-12 Hwy. 24 and 91 Duntroon, reconstructed red stop flasher.  
 5-26-39 Hwy. 26 at Co. Rd. 10, Sunnidale Crns., (2) red on pedestal.  
 5-27-40 Hwy. 27 and Simcoe Co. Rd. 1, (1) red stop flasher.  
 5-11-69-41 Hwy. 11 and 69 Washaga, (1) amber warning; (1) keep right sign.  
 5-26-42 Hwy. 26 at Thornbury, (2) warning flashers.

## DISTRICT 6—TORONTO

- 6-69-105 Hwy. 69 at County Rd. 18, (2) red on pedestal.  
 6-48-108 Hwy. 48 at Port Bolster, (2) red on pedestal.  
 6-48-109 Hwy. 48 at County Rd. 32, (1) red on pedestal.  
 6-69-110 Hwy. 69 at County Rd. 19, (2) red on pedestal.  
 6-10-111 Hwy. 10 at Victoria Square, (1) amber on pedestal.  
 Hwy. 401 at Islington Ave., (1) amber on pedestal on contract  
 no. 62-216 65-55 65-263

## DISTRICT 8—KINGSTON

- 8-2-133-22 Hwy. 2 at Hwy. 133 north of Millhaven, (2) amber flasher signal.

## DISTRICT 9—OTTAWA

- 9-29-7 Hwy. 29 and Renfrew St., Pakenham, (1) amber flasher signal.  
 9-29-12 Hwy. 29, 15 and 15B Carleton Place, (2) red on stop sign.  
 9-17-17 Hwy. 17, Queensway, Greens Cr. area, (3) amber flasher signals.  
 9-43-31-18 Hwy. 43, Jct. with Hwy. 31 south of Winchester, (1) red on stop sign.  
 9-34-24 Hwy. 34 at Glengarry County Rd. 18, 4-way overhead red and amber.  
 9-2-27 Hwy. 2 and Forced Rd., (1) red on stop sign.  
 9-62-34 Hwy. 62 at the "B" Line (Renfrew County Rd. 15), (2) red on stop sign.  
 9-Q-7-15-35 Ottawa Queensway and Hwy. 15 and 7, (2) amber flasher signals.  
 9-62-36 Hwy. 62 west of Pembroke, (1) red on stop sign.  
 9-401-42 Hwy. 401 and Carmen Rd., 2-way overhead amber on detour.  
 9-60-17W-43 Hwy. 60 and 17W, (1) red on stop sign.  
 9-401-45 Hwy. 401 and Aultsville Rd., (3) amber flasher signals.

## DISTRICT 13—NORTH BAY

- 13-11-007J Hwy. 11 and Sherman Mine, (4) flasher on warning sign.

## MATERIALS AND TESTING DIVISION

### A. RUTKA, P.Eng., Materials and Testing Engineer

The Materials and Testing Division consists of six engineering sections located at Downsview, and five regional materials offices. Each section provides a specialized engineering service to the Regions, and to all engineering branches in the Department. The regional offices carry out the detailed soils investigations and designs, and provide a quality control service on construction and maintenance projects.

The Materials and Testing Division assisted in the training courses for construction and municipal inspection personnel, sponsored by the Training Committee, on subjects dealing with soils, concrete and asphalt. The courses were expanded this year to include surface treatments. An air photo interpretation course was held again during the year. In addition, each region held seminars at the District level, to bring the staff up to date on new materials and construction techniques.

The following papers were presented to various technical societies during the year:

1. Properties of Fresh Concrete and Placing Methods.
2. The Performance of an Embankment on a Deep Deposit of Varved Clay.
3. Deep Strength Construction.
4. Mix Design for Bituminous Pavements—Methods and Interpretations.

A Head Office Pavement Selection Committee was established to review the pavement types recommended by the Regional Materials and Road Design offices. This committee consists of the Director of Design; Director of Operations; Road Design Engineer and the Materials and Testing Engineer (Secretary).

## PHYSICAL TESTING SECTION

### J. J. Casey, P.Eng., Principal Testing Engineer

Physical testing is carried out at the central laboratory, at the regional laboratories, and at mobile and temporary laboratories. The regional laboratories and the field laboratories within any region, come under the administration of the Regional Materials Engineer. Technical direction is provided by the Principal Testing Engineer. The Toronto laboratory is equipped to carry out all development and acceptance testing of all materials used in highway construction, whereas the regional and field laboratories are primarily used for quality control purposes, and for pre-engineering purposes. Table I indicates the type and volume of testing performed during the fiscal year.

Various manufacturing plants were inspected to determine their compliance with Department specifications. Products received from these plants and tested at the headquarters laboratory, are shown in Table II.

The physical laboratory undertook the following special investigations:

1. *Alkali carbonate reaction.*

50 structures in the Huntsville-Orillia area had been inspected and evaluated with respect to field performance. The laboratory study on the concrete cores is in progress.

2. *Neoprene joint seal.*

A survey of the performance of neoprene highway seals was made in the winter of 1966-67, and it was found that the seal has not generally performed ade-

TABLE I  
Samples Tested in Regional and other Laboratories 1966-67

TEST	REGIONAL LABORATORIES				TEMPORARY LABORATORIES				
	LONDON	TORONTO	KINGSTON	NORTH BAY	FT. WILLIAM	OTTAWA	IROQUOIS	COMBER	KITCHENER
Soils.....	684	826	1,007	202	137	165	—	—	—
Granular subbase and base.....	321	529	230	462	225	180	35	—	40
Ice control sands.....	13	25	28	—	42	16	—	—	—
Concrete aggregate.....	227	1,165	60	54	35	29	271	30	146
H. L. aggregate.....	40	3,122	108	47	174	18	—	—	25
Concrete mix designs.....	—	128	—	—	—	—	—	—	—
Bituminous mix designs.....	58	71	77	32	26	—	—	—	—
Bituminous plant checks*.....	728	846	563	462	668	—	—	—	—
Extractions*.....	1,348	1,030	1,132	924	1,356	—	—	—	—
Concrete cylinders.....	3,223	9,641	1,584	790	684	1,931	370	250	750
Concrete beams.....	50	813	—	—	—	119	25	60	—
Commercial aggregate sources.....	—	612	—	—	—	—	—	—	—
Bituminous materials—suppliers.....	—	1,291	—	—	—	—	—	—	—
Bituminous materials— from field.....	—	2,542	—	—	—	—	—	—	—
Cement.....	—	221	—	—	—	—	—	—	—
Chemical admixtures.....	—	31	—	—	—	—	—	—	—
Sand (organic).....	—	437	—	—	—	—	—	—	—

\* include regional mobile bituminous labs.



quately due to the poor recovery properties. The revised specification now includes a recovery requirement, and it is expected that satisfactory performance will result.

3. *Accelerated curing of concrete.*  
Our laboratory is co-operating with A.S.T.M. in an attempt to standardize on an accelerated curing method for concrete test cylinders.
4. *High strength concrete.*  
A study is underway to determine the strength producing properties of various aggregates in Ontario for suitability in 5,000 p.s.i. concrete as used in post-tensioned bridge decks.
5. *Air content of hardened concrete.*  
A program to determine the accuracy of the high pressure air meter is well advanced. The effect of the degree of compaction on the accuracy of the test is the main variable under investigation.
6. *Infra-red joint heater.*  
An evaluation of the infra-red joint heater was completed.
7. *Cleaning of bridge decks.*  
Samples were taken of bridge decks to determine the effectiveness of the water-proofing when the old concrete decks are cleaned by air or by sand blasting.
8. *Stripping of hot-mixes.*  
Due to the serious stripping in bituminous mixes, the Department commenced placing a thin sand asphalt course directly over the granular grades. A few projects were investigated to find out if the sand asphalt prevented the stripping. This study is continuing.
9. *Additives for asphaltic concrete mixtures.*  
This study was completed during the year.
10. *Lime stabilization.*  
Clays from several locations were obtained and tested to find out if the lime additive would be beneficial.

**TABLE II—Manufactured Products Tested**

PRODUCTS	NUMBER OF TESTS
Prestressing Wire Strands.....	632
Steel Beam Guide Rails.....	19
Grader and Snow Plow Blades.....	28
Snow Plow Shoes and Points.....	33
Concrete Pipes.....	134
Catch Basins.....	117
Reinforcing Steel.....	32
Sign Posts.....	36
Sign Blanks.....	50
Sign Structures.....	36
Concrete Poles.....	17
Bearing Piles.....	4
Structural Steel and Welding.....	8
Corrugated Metal Pipes.....	62
Fencing.....	3
Saw Blades.....	2
Rubber Hoses.....	4
Concrete Manholes.....	3
Joint Sealers.....	63
Lubricant Adhesives.....	26
Electrical Tape.....	10
Concrete Blocks.....	10

1,329

## CHEMICAL SECTION

**A. C. Suter, P.Eng., Principal Chemical Engineer**

The Chemical Section tests materials and undertakes evaluations of a chemical nature for many Sections within the Department.

Seven protective coating evaluations were completed, and tests performed on 3,737 samples, representing 60 types of materials.

As a result of the many years of salt contamination study, the Department constructed a dome-shaped building to house the sand-salt stockpiles at the Flesherton patrol yard. A full scale study of salt contamination from patrol yards, was initiated by obtaining and testing water from District patrol yards throughout the Province. The results will be of value in determining the extent and severity of salt contamination on patrol yard wells. A number of wells in the patrol yards are affected by a high concentration of hydrogen sulphide or iron. Various water conditioning equipment has been used in such cases, with good success.

This section assisted in the evaluation of various field epoxy coating systems for the Thorold Tunnel. On the basis of this evaluation, a suitable epoxy system was selected.

## SOILS SECTION

**G. A. Wrong, P.Eng., Principal Soils Engineer**

The Soils Section co-ordinates the soil investigations for pre-engineering purposes, establishes standards for uniformity of pavement designs throughout the Province, provides technical assistance on soils problems, co-ordinates the soils training courses, and provides an air photo interpretation and geophysical service to the regional offices.

A total of 27 seismic investigations, covering 48 miles of profile, were undertaken to determine the nature of the subsoil or bedrock elevations. Air photo interpretation investigations were continued, primarily for the purposes of locating construction materials and terrain typing in relatively inaccessible areas, as a preliminary step to more detailed investigations.

The first two deep strength paving projects were completed on Highway 403 on the Brantford Bypass, a distance of 2½ miles, and on Highways 15 and 17, from Bells Corners to Ottawa. With the decreasing supply of granular materials in various parts of the Province, it is expected that deep strength and stabilized base designs will be used to a greater extent.

## MATERIALS SECTION

**W. R. Bennett, P.Eng., Principal Materials Engineer**

The Materials Section provides technical advice and guidance on the use of aggregates for asphalt and concrete purposes, and on mix designs and quality control of asphalt and concrete mixtures, to the Regional Materials and District Construction and Maintenance personnel. The main effort was devoted to the improvement of materials and construction techniques previously initiated with regards to the automatic screed control, concrete bridge deck finishing, deep strength construction and nuclear density testing to determine the compaction of the bituminous mixtures.

Extensive concrete pavement performance studies were made on Highway 401 between Brockville and Prescott, and between Highway 10 and Highway 25, in an attempt to establish the reasons for the heavy amount of cracking, and to obtain representative core samples for detailed analysis. One hundred bridge deck surveys were made to determine the condition of the bridge decks. These bridge decks are covered with bituminous materials, and hence must be exposed to be properly examined. More effort was devoted to the quality control computer program for rapid statistical quality control service. The program is now ready for operation.

The following special investigations were undertaken, most of them in co-operation with the Maintenance Division:

1. The construction of two test sections with cationic emulsion slurry seals; one on Highway 98 from Merlin to Tilbury, and the other on Highway 11 south of Bradford. Both of these sections did not turn out too satisfactory because of the ridging that developed by overlapping the joints. The cationic emulsion slurry seal did set up in about half an hour, and was much better in this respect than the anionic type.
2. A trial section of Reclamite was laid on Highway 11 south of Bradford. This material is alleged to penetrate into the existing hard asphalt mixtures and to liven it up by increasing the penetration of the asphalt binder. Unfortunately the test was placed on a superelevated curve at too high a concentration, and the test was not too successful.
3. A new type of cut back was designed by one of the refineries for surface treatment work, and was tried out in a test section on Highway 97. The results of this test were satisfactory.

FOUNDATION SECTION

A. G. Stermac, P.Eng., Principal Foundations Engineer

This section carries out foundation investigations for bridge sites, and deep cuts and high embankments in order to arrive at foundation designs and embankment stabilities. All of the work is carried out from the central office at Downsview. As in previous years, the volume of work was more than could be handled by the staff, and several projects were assigned to consultants. The details of the foundation investigations are shown in Table III. The drilling equipment is hired for all investigations on a contract drilling basis.

TABLE III  
Foundation Investigations

	SECTION	CONSULTANT
Structures.....	80	41
Structures for Municipalities.....	2	—
Stability investigations.....	3	—
Field tests and instrumentations.....	6	—
Patrol yards.....	1	—
	<hr/> 92	<hr/> 41
Drilling		
Drilling in soil.....	27,510 ft.	8,600 ft.
Drilling in rock.....	2,130 ft.	1,200 ft.

**OFFICE ENGINEER'S SECTION**

**Z. Katona, P.Eng., Office Engineer**

This section maintains a record of all sand, gravel and quarry sources, evaluates the suitability of materials for various purposes, and provides a drafting service for the Division.

One hundred and forty strip maps were prepared for contract tendering purposes.

As the regional laboratories are not equipped to carry out all quality tests, samples are submitted to the central laboratory for testing and evaluation, and the results are teletyped to the Districts and the Regions.

The drafting work included the preparation of 131 foundation drawings and several charts, graphs, for papers and reports.

Two hundred and three soils design profiles were received from the regional offices.

**Regional Offices**

T. J. Kovich, P.Eng.	Regional Materials Engineer, Toronto
J. R. Roy, P.Eng.	Regional Materials Engineer, London
J. E. Gruspier, P.Eng.	Regional Materials Engineer, Kingston
E. R. Saint, P.Eng.	Regional Materials Engineer, North Bay
F. Norman, P.Eng.	Regional Materials Engineer, Fort William

The regional offices carry out pavement performance surveys, detailed soils and granular surveys for pre-engineering purposes, the quality control service for construction and maintenance purposes, and laboratory testing for acceptance testing of materials for construction and maintenance work. The soils staff visit the construction work on an as-required basis, whereas the concrete and bituminous staff provide an inspection and technical service on a regular basis. Each District, through their inspectors, has facilities to check compaction of earth and granular materials, gradation of materials and mixes, and air contents of plastic concrete.

The regions provide mobile bituminous compaction laboratories, and temporary laboratories on the site, for control of the work, as a service to the Districts, in areas where the construction is concentrated. The volume of testing carried out at the regional level, is shown in Table I. The field activities are shown in Table IV.

Many of the pavement designs, particularly for resurfacing projects, were made on the basis of benkelman beam deflection studies.

The highlights of the regional activities are as follows:

1. Providing assistance to the Research Branch on 7 test sections where styrofoam was used on Highway 69 south of Sudbury, to evaluate this material for frost heave prevention.
2. Detailed evaluation and instrumentation of three muskeg areas in conjunction with Queen's University north of Kingston.
3. Inspection of 2 concrete paving projects on Highway 77 and Highway 81, to determine if traffic could be maintained while the roads were under construction.



TABLE IV—Field Operations—Regions

	LONDON	TORONTO	KINGSTON	NORTH BAY	FORT WILLIAM
<b>SOILS</b>					
Number of design reports prepared.....	84	90	78	60	27
Borings—number of miles investigated.....	212	125	260	281	142
Surveys—frost heave and spring performance (miles).....	1,308	500	547	1,125	1,400
Grading—contracts inspected.....	57	71	15	32	18
<b>BITUMINOUS</b>					
Paving contracts inspected (miles)	71	56	37	18	16
<b>CONCRETE</b>					
Paving inspected (miles—2 lane widths).....	13	89	11	—	—
Structures inspected.....	27	62	27	23	4

## MUNICIPAL ROADS DIVISION

J. P. Howard, P.Eng., Municipal Engineer

The 1966 subsidizable expenditures by the municipalities increased by approximately \$33,326,000 over 1965 and by \$137,999,000 over 1957, as shown in the following table:

### EXPANSION OF AID TO MUNICIPALITIES (IN \$1,000's)

YEAR	TOTAL EXPENDITURE BY MUNICIPALITIES	SUBSIDIES UNDER THE HIGHWAY IMPROVEMENT ACT	DEVELOPMENT ROAD EXPENDITURES	TOTAL AID
1957.....	\$101,871	\$ 51,484	\$ 5,783	\$ 57,267
1958.....	108,620	54,025	6,927	60,952
1959.....	124,391	62,362	7,880	70,242
1960.....	140,438	70,444	8,135	78,759
1961.....	142,010	71,542	7,786	79,328
1962.....	151,686	76,231	7,718	83,949
1963.....	173,693	88,041	11,109	99,150
1964.....	198,155	97,300	14,455	111,755
1965.....	206,544	102,656	17,073	119,729
1966.....	239,870	117,387	18,334	135,721

## SUBSIDIES SECTION

A. A. Ward, P.Eng., Subsidies Engineer

973 Municipalities and 46 Indian Reserves received subsidy under The Highway Improvement Act for expenditures made in 1966. The aggregate amounts were as follows:

	ROAD MILEAGE	APPROVED APPROPRIATION	APPROVED EXPENDITURES	SUBSIDY
Metro Toronto:				
Roads.....	366.5	39,000,000	38,331,956	19,165,978
Subway.....	—	20,000,000	17,506,084	5,835,361
Counties*.....	9,247.3	50,948,350	45,404,138	24,663,011
Townships**.....	48,903.7	75,333,503	66,814,210	39,371,538
Urbans.....	10,535.5	97,811,022	71,813,235	28,350,639
TOTALS.....	69,053.0	283,092,875	239,869,623	117,386,527

\* Includes Suburban Commissions.

\*\* Includes Improvement Districts and Indian Reserves.

## METROPOLITAN TORONTO

(Part XII-A, The Highway Improvement Act)  
(Municipality of Metropolitan Toronto Act)

An amendment to The Highway Improvement Act passed in 1963 authorized the payment of subsidy at the rate of  $33\frac{1}{3}\%$  on expenditures for subway right-of-way construction made on or after April 1st, 1964, on the Bloor-Danforth Subway. Expenditures approved and subsidies paid for this work since that date were as follows:

YEAR	APPROVED EXPENDITURE	SUBSIDY PAID
1964.....	\$17,375,569	\$ 5,791,856
1965.....	10,402,103	3,467,367
1966.....	17,506,084	5,835,361
TOTALS.....	\$45,283,756	\$15,094,584

Under the Municipality of Metropolitan Toronto Act, the Municipality claimed subsidy for the year on the following Expenditures.

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$28,751,616.18	\$3,184,894.32	\$31,936,510.50
Bridges and Culverts.....	3,583,206.52	244,493.81	3,827,700.33
Winter Control.....	—	2,567,745.31	2,567,745.31
TOTAL APPROVED EXPENDITURES.....	\$32,334,822.70	\$5,997,133.44	\$38,331,956.14

The following major construction works were completed or started in 1966.

Structures:	completed.....	14
	under construction.....	4
Elevated Structure: (F. G. Gardiner)	under construction.....	1.0 miles
Road Construction:	completed (Don Valley Pkwy.; Spadina Expressway).....	8.25 miles
	under construction (Don Valley Pkwy.; Leslie St.).....	1.38 miles
Existing Roads:	reconstructed.....	13.29 miles
	under construction.....	1.52 miles
Resurfacing of Existing Pavements.....		19.39 miles
Intersection Improvements: completed.....		25

## COUNTY ROADS

(Part VII, The Highway Improvement Act)

The 1966 expenditures on County and Suburban roads showed an increase over 1965 figures of more than \$3,400,000 or a percentage increase of approximately  $8\frac{1}{2}\%$ . Construction expenditures increased by  $6\frac{1}{2}\%$  and maintenance expenditures by  $10\frac{1}{2}\%$ . Winter control expenditures showed a decrease of approximately \$250,000.

A breakdown of the 1966 expenditures follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$24,550,069	\$11,351,059	\$35,901,128
Bridges and Culverts.....	6,196,896	339,578	6,536,474
Winter Control.....	—	2,966,536	2,966,536
TOTAL APPROVED EXPENDITURES.....	\$30,746,965	\$14,657,173	\$45,404,138

Some understanding of the type and magnitude of the work represented by these figures can be gained from the following summary of the principal items of work performed by the Counties and Suburban Commissions.

#### CONSTRUCTION ITEMS

1. Roads:	
New or rebuilt gravel and stone surfaces.....	493 miles
Low cost bituminous surfaces.....	166 miles
High cost bituminous surfaces.....	274 miles
Graded to standard cross-section.....	273 miles
2. Bridges and Culverts:	
Bridges (10' span and over)—concrete—79; steel—5; timber—3.	
TOTAL.....	87
Culverts (under 10' span)—concrete—161; steel—39; timber—1.	
TOTAL.....	201
3. Pipe Culverts installed.....	3,194

#### MAINTENANCE ITEMS

1. Surface and Drainage:	
Roadside Ditching.....	182 miles
Bituminous Surface Treatment.....	709 miles
Dust Laying—with oil.....	472 miles
with calcium chloride.....	1,881 miles
Resurfacing—crushed gravel.....	405,110 cu. yds.
crushed stone.....	94,582 cu. yds.
pit-run gravel.....	162,595 cu. yds.
2. Winter Control—snow removed.....	9,600 miles
snow fence erected.....	1,630 miles
3. Weed and Brush Control—by spraying.....	6,423 miles
by cutting.....	7,202 miles
4. Bridges repaired.....	108
Culverts repaired.....	341

### COUNTY SUBURBAN ROADS

(Part VIII, *The Highway Improvement Act*)

Thirty-five cities and separated towns in the Province have joined their neighbouring counties to form Suburban Roads Commissions. These Commissions have assumed portions of the county road systems of special interest to the cities and separated towns. Their 1966 mileages, expenditures and government aid are shown below.

COUNTY	SUBURBAN ROAD COMMISSION	MILEAGE	APPROVED EXPENDITURE	GOVERNMENT SUBSIDY
Brant.....	Brantford.....	43.9	181,483.04	93,768.26
Carleton.....	Ottawa.....	138.0	1,300,082.05	658,147.14
	Eastview.....	2.6	20,647.89	10,633.39
Elgin.....	St. Thomas.....	22.1	187,579.53	137,400.67
Essex.....	Windsor.....	117.0	649,503.14	352,446.67
Frontenac.....	Kingston.....	21.1	37,086.82	30,660.75
Grey.....	Owen Sound.....	24.7	69,313.49	35,139.78
Hastings.....	Belleville.....	16.2	78,440.71	39,829.90
Kent.....	Chatham.....	31.5	102,609.45	51,516.89
Lambton.....	Sarnia.....	25.5	184,456.37	92,805.21
Lanark.....	Smiths Falls.....	11.0	10,766.56	5,490.25

Leeds & Grenville.....	Brockville.....	18.4	47,273.77	23,751.66
	Gananoque.....	6.7	23,180.16	11,631.14
	Prescott.....	2.8	13,687.33	6,843.67
	Smiths Falls.....	5.2	30,799.65	15,613.69
Lincoln.....	St. Catharines.....	47.3	495,282.40	310,441.29
Middlesex.....	London.....	67.6	659,090.55	376,547.52
Northumberland and Durham.....	Trenton.....	12.7	23,438.80	11,917.25
Ontario.....	Oshawa.....	37.9	374,097.73	211,978.75
Oxford.....	Ingersoll.....	7.3	10,515.38	5,278.04
	Woodstock.....	9.4	29,425.26	15,315.75
Perth.....	St. Mary's.....	6.4	16,399.28	8,320.09
	Stratford.....	23.1	75,900.46	38,989.90
Peterborough.....	Peterborough.....	38.7	105,251.95	53,220.61
Simcoe.....	Barrie.....	20.1	86,566.06	48,526.77
Stormont, Dundas and Glengarry.....	Cornwall.....	61.0	126,458.08	70,359.74
Waterloo.....	Galt.....	33.9	85,038.18	44,796.07
	Kitchener.....	60.1	510,335.50	309,038.34
	Waterloo.....	23.0	117,966.21	60,380.78
Welland.....	Niagara Falls.....	27.8	215,040.33	113,004.98
	Port Colborne.....	6.4	65,838.95	35,908.89
	Welland.....	17.2	152,612.86	79,537.57
Wellington.....	Guelph.....	37.9	175,098.25	87,563.43
Wentworth.....	Hamilton.....	169.8	1,088,116.02	544,114.51
York.....	Toronto-York.....	195.5	3,195,889.94	1,621,877.79
TOTALS.....		1,389.8	10,545,272.15	5,612,797.14

## INCORPORATED TOWNSHIPS

(Part IX, The Highway Improvement Act)

572 Townships, 17 Improvement Districts and 46 Indian Reserves received aid under this part of the Act in 1966. The expenditures made by these 635 road authorities showed an increase over 1965 expenditures of approximately \$9,800,000 with a corresponding increase of government subsidy of approximately \$5,900,000. Road expenditures increased by approximately \$8,200,000.

A breakdown of the 1966 expenditures follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$25,393,300	\$26,478,925	\$51,872,225
Bridges and Culverts.....	8,286,504	1,046,459	9,332,963
Winter Control.....	—	5,609,022	5,609,022
TOTAL APPROVED EXPENDITURE.....	\$33,679,804	\$33,134,406	\$66,814,210

These expenditures provided for the following major items of work:

### CONSTRUCTION ITEMS

- Roads:
 

New or rebuilt gravel and stone surfaces.....	1,317 miles
Low cost bituminous surfaces.....	300 miles
High cost bituminous surfaces.....	177 miles
Graded to standard Cross-section.....	2,091 miles
- Bridges and culverts:
 

Bridges (10' span and over)—concrete—156; steel—32; timber—19.	
TOTAL.....	207
Culverts (under 10' span)—concrete—75; steel—526; timber—46.	
TOTAL.....	647
- Pipe Culverts installed.....

14,076



MAINTENANCE ITEMS

1. Surface and drainage:	
Roadside Ditching.....	2,241 miles
Bituminous surface treatment.....	609 miles
Dust laying—with oil.....	2,631 miles
with calcium chloride.....	12,561 miles
Resurfacing—crushed gravel.....	2,954,524 cu. yds.
crushed stone.....	259,428 cu. yds.
pit-run gravel.....	1,268,218 cu. yds.
2. Winter control—snow removed.....	48,795 miles
snow fence erected.....	2,703 miles
3. Weed and brush control—by spraying.....	19,340 miles
by cutting.....	20,778 miles
4. Bridges repaired.....	560
Culverts repaired.....	4,849

CITIES, TOWNS AND VILLAGES

(Part X, The Highway Improvement Act)

For the third consecutive year the expenditures made by the 346 urban municipalities showed the highest rate of increase over previous years' expenditures. The 1966 expenditures totalled \$71,813,235 an increase of approximately \$10,993,000 or a percentage increase of approximately 18%.

A breakdown of the expenditures made by 33 cities, 6 separated towns, 149 towns and 158 villages follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted).....	\$37,678,964	\$22,355,077	\$60,034,041
Bridges and Culverts.....	1,964,453	622,835	2,587,288
Winter Control.....	—	9,191,906	9,191,906
TOTAL APPROVED EXPENDITURES.....	\$39,643,417	\$32,169,818	\$71,813,235

A chronological summary of urban expenditures and provincial aid, and a table of street mileages by type of surface is included in the appendix.

DIRECT EXPENDITURES SECTION

P. D. Patterson, P.Eng., Direct Expenditures Engineer

DEVELOPMENT ROADS

(Part XI, The Highway Improvement Act)

During the fiscal year, positive response to the direct aid program associated with the County Road Needs Study achieved effective results. Some 640 miles of desirable county roads which have been designated as part of this program are subject to the financial arrangements of the program.

Townships and towns and villages in the territorial districts continued to benefit from development road assistance where the need was demonstrated.

\$18,334,104.81 was spent on 221 development road designations applying to 1,097 miles of roads under the jurisdiction of eligible municipalities. During the fiscal year

41 projects covering 174 miles of road were completed and 50 new designations on 256 miles of road were made.

Locations, mileages and expenditures on development roads are listed in the appendix.

## ROADS IN TERRITORY WITHOUT MUNICIPAL ORGANIZATION

*(Part XII, The Highway Improvement Act)*

Assistance to Local Roads Boards, Statute Labour Boards and groups of settlers is rendered under this Part of the Act.

The amount of contribution to Statute Labour Boards was at least equivalent to the value of the statute labour. Local Roads Boards benefit from a contribution of twice the amount of the local contribution which is derived from taxes levied on the assessed value of the land in the local roads area. During the year, 84 Local Roads Boards were operating and 26 new Boards were formed.

The distribution of aid by districts is listed in the following table:

### SUMMARY OF UNINCORPORATED TOWNSHIPS EXPENDITURES IN THE FISCAL YEAR 1966-67

MUNICIPAL DISTRICT	VALUE OF STATUTE LABOUR, LOCAL ROADS OR OTHER WORK PERFORMED	DIRECT EXPENDITURE ON ROADS BY DEPARTMENT	TOTAL VALUE OF WORK PERFORMED	PERCENTAGE OF AID BY DEPARTMENT
5 Muskoka.....	\$ 16,000.00	\$ 17,856.46	\$ 33,856.46	53
10 Nipissing.....	3,744.24	9,232.74	12,976.98	71
11 Huntsville and Parry Sound....	72,592.86	105,305.44	177,898.30	59
13 Nipissing.....	135,678.80	324,556.84	460,235.64	71
14 Temiskaming and Cochrane South.....	67,898.88	108,422.81	176,321.69	61
16 Cochrane North.....	80,711.76	169,556.14	250,267.90	68
17 Sudbury.....	128,577.75	298,229.32	426,807.07	70
18 Algoma.....	29,299.14	111,319.35	140,618.49	79
19 Thunder Bay.....	89,830.94	264,734.99	354,565.93	75
20 Kenora and Rainy River.....	71,708.61	103,629.69	175,338.30	59
TOTALS.....	\$696,042.98	\$1,512,843.78	\$2,208,886.76	68

### PROGRAM STUDIES SECTION

R. D. Martell, P.Eng., Program Studies Engineer

During the fiscal year, work was carried out on 14 Township Programing Studies. 7 of these studies were completed and the reports published, namely:

Ancaster  
Brantford  
Cardin  
Sandwich West

Six Nations and New Credit  
Indian Reserves  
Walpole  
Waterloo

The remaining seven studies, which are in various stages of completion, are being carried out in the following Townships:

Bayham	King
Clarke	Onondaga
Darlington	Vaughan
Dover	

Two studies relating to desirable county roads in urban areas were initiated by the County of Carleton and the Town of Paris.

A committee consisting of representatives from various Government Departments and other interested organizations was set up to develop ways and means of carrying out programing studies in urban areas. These studies would consider roads, sewers and water distribution facilities. Work on methodology has reached the stage where pilot studies can be carried out during the fiscal year 1967-68.

**PLANS APPROVALS**

**B. R. Heavysege, P.Eng., Plans Approval Engineer**

The plans approved during the year were as follows:

Development Roads — 67 plans.....	300 miles
By-law Construction — 188 plans.....	252 miles
TOTAL — 255 plans.....	552 miles

In comparison to the previous year, the number of projects have increased by over 50 and the total length by over 125 miles.

All by-law construction is approved at the district level, unless a Head Office decision is required.

Development Road contracts are all approved from this office, therefore, the liaison with municipal representatives and district personnel is extensive.

The standard of plans and contract documents has continually improved and, in general, has reached a satisfactory level.

**DISTRICT No. 1 — CHATHAM****F. C. Brown, P.Eng., District Engineer****CONSTRUCTION**

During 1966 further progress was made in the elimination of grade crossings on the Macdonald-Cartier Freeway. An overpass on Kent County Road 16 was brought into use and work effectively completed on Interchange No. 3 (Maidstone Town Line). This involved a post-tensioned deck constructed in two stages. While the final results were very good, considerable inconvenience was caused to traffic for a period of about six months. Work was also commenced on two fly-overs in Sandwich South Township, two in Maidstone Township, and Interchange No. 4 at the Puce River Road (Essex County Road 8). Between the Windsor entrance and the Puce River Road Interchange, the highway was resurfaced with a  $\frac{3}{4}$  inch layer of dense graded bituminous hot mix material. This has much improved the riding qualities and further observations will be made as to the effect of the concrete joints on this resurfacing.

On Highway 18 reconstruction was completed between Kingsville and Harrow; this was the first job in the District using automatic screed controls for hot mix with very satisfactory results. Work was also completed through the hamlet of LaSalle, including a new bridge over Turkey Creek.

On Highway 77 between Staples and Highway 98, complete reconstruction included the laying of a 22 foot wide, 7 inch deep concrete pavement. This work was done under traffic and caused considerable problems in traffic control.

On Highway 3 work was completed on the tunnelling work on the Simpson and Askew Drains.



Hwy. 77—Reconstruction north of Staples. Photo 8463-A—(Chatham)



## MAINTENANCE

Normal summer and winter maintenance operations were carried out in the District during 1966-67. Three crushed gravel shouldering contracts and two hot mix patching contracts were carried out. Surface treatment of Highway 7 from Reece's Corners westerly for 10 miles was completed in July. One stump removal contract together with a tree and stump removal contract removed 237 trees and 1,236 stumps. Under the Winter Works program, 628 trees were removed. A four-bay metal garage building was completed, and the patrol yard roadways and sandpile area paved at Port Franks, on Highway 21. Two buildings (salt shed and heated storage) were erected at the Alvinston Patrol Yard on Highway 79. The Electrical and Bridge Crews had a busy year. The Mud-jacking Crew was in the District in the fall. Three depressions on Highway 401 and one on Highway 39, were raised. This operation proved very satisfactory and intentions are to treat more sections of Highway 401 in the future. Slurry-seal was applied to Highway 98, from Blenheim to Charing Cross, a distance of 4.4 miles. The District experienced a fairly severe winter with the Windsor and Essex County areas receiving record snowfalls.

## Automatic Signals at Railway Crossings

HWY. No.	R.Y. NAME INITIALS	LOCATION	TYPE OF SIGNAL
18	C. & O.	Lot 9, Con. 1, Western Division; Township of Gosfield South, County of Essex.....	2 flashing light signals and 1 bell
40A	C.N.R.	Churchill Road, City of Sarnia, County of Lambton	2 flashing light signals and 1 bell
77	C. & O.	Erie Street, Town of Leamington, County of Essex	Wig-wags replaced with flashing light signals and 1 bell
80	C. & O.	Lot 24, Front Concession, Township of Moore, County of Lambton.....	2 flashing light signals and 1 bell

## Bituminous Hot Mix Pavement

HWY. No.		MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
2	Intersection of Hwys. 2 and 39.....	0.5	1966	Nil	0.5	917.06
3	Intersection of Hwy. 3 (at Frazer Road) and Oak Street 0.3 mi. west of Leamington West Limits.....	0.1	1966	Nil	0.1	277.58
18	Kingsville to Harrow.....	8.44	1965	3.80	4.64	19,215.77
18	Through LaSalle.....	1.52	1965	Nil	1.52	12,531.44
40	Hydro Electric Power Company Inlet and Outlet Canal Culverts approximately 1.0 mi. south of Courtright.....	0.72	1965	Nil	0.72	933.26
77	Hwy. 98 to Staples.....	5.44	1966	Nil		640.44
79	Road assumption along west limits of Town of Bothwell.....	1.90	1965	Nil	1.90	5,985.01
401	Underpass at County Road 16 2.3 mi. east of Hwy. 21.....	0.41	1965	Nil	0.41	1,006.47
401	From the junction of Hwy. 3 Interchange 1 easterly to County Road to Puce Interchange 4.....	9.75	1966	Nil	9.75	12,382.77
401	Essex County Road 7 Interchange 3.....	0.52	1965	Nil	0.52	9,721.78
	TOTAL.....	29.30		3.80	20.06	63,611.58

Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	TONS	
		PLACED	
	Various throughout district.....	599	

Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	From Rochester-Tilbury North Township Line to Walker Road.....	1.43	1,737
3	From Leamington West Limits westerly for 6.6 mi.....	.85	901
40	From Sarnia south limits to Kent-Lambton County Line.....	19.60	1,270
79	West leg from Hwy. 2 northerly to the Town of Bothwell south limits.....	1.20	1,250
79	From Bothwell north limits to Watford north limits.....	22.30	2,749
80	From junction of Hwys. 40 and 80 to Inwood Sideroad.....	24.80	1,928
107	From junction of Hwys. 107 and 3 to junction Hwys. 107 and 18.....	.32	342
401	From junction of Hwy. 3 Interchange 1 easterly to County Road to Puce Interchange 4.....	9.75	12,382
TOTALS.....		80.25	22,559

Bituminous Surface Treatment

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BITUMULS USED	TONS CHIPS USED
7	Reeces Corners westerly 10 mi.....	10.00	49,529	2,437

Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TRAFFIC	TYPE OF STRUCTURE
18	Turkey Creek, LaSalle.....	1965	1966	1966	Reinforced concrete, steel beam
401	Underpass at County Road 16 2.3 mi. east of Hwy. 21.....	1965	1966	1966	Reinforced concrete, steel beam
401	Underpass at Maidstone Township Road, Concession VII 7.1 mi. east of Hwy 98....	1966	—	—	Reinforced concrete, prestressed concrete girders
401	Underpass at Maidstone Township Road, Concession IX 5.4 mi. east of Hwy. 98.....	1966	—	—	Reinforced concrete, prestressed concrete girders
401	Underpass at Essex County Road 8 to Puce, Interchange 4.....	1967	—	—	Reinforced concrete, prestressed concrete girders

401	Puce River widening of existing structure....	1967	—	—	Reinforced concrete, rigid frame
401	Underpass at Essex County Road 7, Interchange 3.....	1965	1966	1966	Reinforced concrete post tensioned
401	Underpass at Sandwich South Township Road, Concession X 25.2 mi. west of the junction of Hwy. 2, Tilbury.....	1966	—	—	Reinforced concrete, prestressed concrete girders
401	Underpass at Sandwich South Township Road Concession VIII 27 mi. west of junction of Hwy. 2, Tilbury.....	1966	—	—	Reinforced concrete, prestressed concrete girders

Concrete Base Pavement, Asphalt Top

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	THIS FISCAL YEAR			
				PREV. YRS.	MILES COMPL.	TONS PLACED	PAVEMENT WIDTH	
401	Essex County Road 7 Interchange 3 leg "A" inner loop and outer loop, leg "C" inner loop and outer loop.....	0.52	1965	Nil	0.52	1,008.04	0-12 feet	



Hwy. 401—Underpass, 2½ miles east of Hwy. 21. Photo 8464—(Chatham)

Concrete Pavement

HWY. No.	LOCATION	MILES	YEAR BEGUN	MILES	THIS FISCAL YEAR		
		IN JOB		COMPL. PREVIOUS YEARS	MILES COMPL.	SQ. YDS. Placed	PAVEMENT WIDTH
77	From Hwy. 98 to Staples.....	5.44	1966	Nil	5.44	71,021.48	22 feet

Crushed Gravel and Stone on Roads by Contract

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	Chatham west limits westerly.....	8.00	3,985.45
2	From Rochester/Tilbury North Township Line to Walker Road.....	1.43	1,734.26
3	From Leamington west limits westerly 6.6 mi.....	.85	906.01
18	From Harrow to Malden Centre.....	6.80	4,841.01
21	From Thamesville to Dresden.....	10.20	4,598.93
40	From Sarnia south limits to Kent/Lambton County Line.....	19.60	453.56
79	From Bothwell north limits to Watford north limits.....	22.30	1,955.80
79	From 4 mi. south of Alvinston to 4 mi. north of Alvinston.....	8.80	4,596.80
80	From the Junction of Hwys. 40 and 80 to Inwood Sideroad.....	24.80	1,790.62
98	From Charing Cross to Merlin.....	8.80	6,009.03
107	From the junction of Hwys. 107 and 3 to junction of Hwys. 107 and 18....	0.32	370.15
401	From Ruscomb Road to junction of Hwy. 401 and Walker Road.....	15.20	6,959.60
TOTALS.....		127.10	38,201.22

Crushed Gravel and Stone on Roads by Department's Forces

HWY. No.	LOCATION	TONS PLACED
	Various locations by Patrols for shouldering.....	9,150

Grading and Culverts

Hwy. No.	LOCATION	MILES	YEAR BEGUN	MILES	MILES
		IN JOB		COMPL. PREVIOUS YEARS	COMPL. THIS YEAR
2	Intersection of Hwys. 2 and 39.....	0.50	1966	Nil	0.50
3	From 14.60 mi. west of Blenheim west limits west- erly to Stevenson Road 4.60 mi. including Port Alma patrol yard.....	4.60	1966	Nil	25%
3	Intersection of Hwy. 3 (at Frazer Road) and Oak Street 0.30 mi. west of Leamington west limits....	0.10	1966	Nil	0.10
18	Kingsville to Harrow.....	8.44	1965	Nil	8.44
18	Turkey Creek Bridge and Hwy. 18 through LaSalle.	1.52	1965	Nil	1.52
40	Hydro Electric Power Company inlet and outlet canal culverts approximately 1.0 mi. south of Courtright.....	0.72	1965	Nil	0.72
77	From Hwy. 98 to Staples.....	5.44	1966	Nil	5.44
79	Road Assumption along the west limits of the Town of Bothwell.....	1.90	1966	Nil	1.90
401	Underpass at County Road 16 2.3 mi. east of Hwy. 21.....	0.41	1965	Nil	0.41
401	Underpass at Maidstone Township Road, Conces- sion VII 7.10 mi. east of Hwy. 98.....	0.43	1966	Nil	54%
401	Underpass at Maidstone Township Road, Conces- sion IX 5.40 mi. east of Hwy. 98.....	0.40	1966	Nil	54%
401	Interchange 4 at Essex County Road 8, 8.9 mi. east of Hwy. 98.....	0.80	1966	Nil	20%



401	Underpass at Sandwich South Township Road, Concession X, 25.2 mi. west of the junction of Hwy. 2 Tilbury.....	0.47	1966	Nil	47%
401	Underpass at Sandwich South Township Road, Concession VIII, 27.0 mi. west of the junction of Hwy. 2 Tilbury.....	0.38	1966	Nil	47%
401	Interchange 3 at Essex County Road 7.....	0.52	1965	Nil	0.52
TOTALS.....		26.63			19.55

### Granular Base on New Grading

HWY. No.	LOCATION	MILES		MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR	
		IN JOB	YEAR BEGUN		MILES COMPL.	TONS PLACED
2	Intersection of Hwys. 2 and 39.....	0.50	1966	Nil	0.50	6,381.69
3	From 14.6 mi. west of Blenheim west limits westerly to Stevenson Road 4.6 mi. including Port Alma patrol yard.....	4.60	1966	Nil	—	8,650.00
3	Intersection of Hwy. 3 (at Frazer Road) and Oak Street 0.30 mi. west of Leamington west limits.....	0.10	1966	Nil	0.10	1,699.52
18	Kingsville to Harrow.....	8.44	1965	7.25	1.19	7,704.49
18	Turkey Creek Bridge and Hwy. 18 through LaSalle.....	1.52	1965	1.29	0.23	15,085.38
40	Hydro Electric Power Company inlet and outlet canal culverts approxi- mately 1.0 mi. south of Courtright ....	0.72	1965	Nil	0.72	12,293.00
77	From Hwy. 98 to Staples.....	5.44	1966	Nil	5.44	75,494.91
79	Road Assumption along west limits of the Town of Bothwell.....	1.29	1966	Nil	1.29	46,353.14
401	Underpass at County Road 16 2.3 mi. east of Hwy. 21.....	0.41	1965	0.37	0.04	906.93
401	Underpass at Maidstone Township Road, Concession VII, 7.10 mi. east of Hwy. 98.....	0.43	1966	Nil	0.09	2,565.00
401	Underpass at Maidstone Township Road, Concession IX, 5.4 mi. east of Hwy. 98.....	0.40	1966	Nil	0.08	2,565.00
401	Underpass at Sandwich South Town- ship Road, Concession X, 25.2 mi. west of the junction of Hwy. 2, Til- bury.....	0.47	1966	Nil	—	—
401	Underpass at Sandwich South Town- ship Road, Concession VIII, 27.0 mi. west of junction of Hwy. 2.....	0.38	1966	Nil	—	—
401	Interchange 3 at Essex County Road 7.	0.52	1965	Nil	0.52	64,008.00
401	Interchange 4 at Essex County Road 8, 8.90 mi. east of Hwy. 98.....	0.80	1966	Nil	0.80	6,957.00
TOTAL.....		26.02		8.91	11.00	250,664.06

### New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
21	Port Franks Patrol yard.....	Metal	Patrol garage	1965	1966
79	Alvinston patrol yard.....	Frame	Salt shed	1966	1966
79	Alvinston patrol yard.....	Frame	Storage garage	1966	1966

Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	6	—	—
Calcium dust layer on gravel roads.....	Nil	—	—
Calcium for de-icing roads.....	Nil	—	—
Development roads built.....	Nil	—	—
Off-road parks maintained.....	8	—	—
Roads snowploughed and kept open, King's highways.....	21	—	752
Roads snowploughed and kept open, secondary highways.....	Nil	Nil	—
Roadside picnic places maintained.....	80	—	—
Routine maintenance, King's highways.....	21	—	752
Routine maintenance, secondary highways.....	Nil	Nil	—
Salt for de-icing roads (raw).....	—	10,691	—
Salt in sand, stockpiled.....	—	307	—
Sand for winter maintenance.....	—	11,918	—
Scale houses maintained.....	3	—	—
Seeding by department's forces..... (acres)	156	—	—
Shrubs received and planted this year.....	1,909	—	—
Signs erected or replaced.....	6,098	—	—
Snow fence erected, dismantled, stored.....	—	—	40
Snow hedges planted this year.....	Nil	—	—
Traffic lights installed this year.....	5	—	—
Weed control.....	745	—	725
Zone painting on King's highways..... (gals.)	8,601	—	1,204
Zone painting on secondary highways..... (gals.)	Nil	—	—

**DISTRICT No. 2 — LONDON****H. C. Dernier, P.Eng., District Engineer****CONSTRUCTION**

Highway 81, from Highway 7 southerly 7.22 miles, was the site for an experiment in economics and practicability, in paving a minor Highway with seven inches of unreinforced concrete, 22 feet wide, over a minimum depth of Granular "A" on a clay grade, but having shoulders only six feet wide. Problems were encountered in maintaining traffic during paving operations. Clay worked through the thin lift of gravel due to operation of gravel and concrete batch trucks.

Resurfacing was completed on Highway 401 between Wellington Road and Highway 4; on Highway 2 between Woodstock and Eastwood, and on Highway 4 between Lambeth and Highway 401. Small contracts for channelization at the junctions of Highways 24 and 24A north of Simcoe, and at the junction of Highway 3 and Cedar Street in Simcoe, were completed. Paving of Highway 97 from Plattsville to the Oxford-Waterloo County Line was completed. This contract included reconstruction through Plattsville to urban standards.

On Highway 24A, 5.6 miles north of Simcoe, the approaches and structure over the New York Central Railway were constructed and opened to traffic. The overpass structure and grading at the Second Concession and Highway 126 was completed but not to be paved this year. Work progressed on building the approaches and the bridge over both the Canadian Pacific Railway and Thames River on Highway 59 at Woodstock. Approximately 365 tons of structural steel (welded built-up plate girders) were used in this 508 foot structure.

Construction progressed on Highway 4 between Birr and Elginfield (Highway 7) with the binder asphalt course being placed.

With the exception of the item re Highway 81 no new techniques applied. No unusual problems were encountered.

**MAINTENANCE**

Routine Summer and Winter maintenance was carried out as in previous years.

*Summer Maintenance*

Grass mowing procedure was modified to some extent as compared with other years. Mowing standards were produced by Head Office and largely followed in this District. The principal variations from previous years were:

- (a) Grass was mowed to a minimum height of four inches. This was noticed to reduce, if not eliminate, the tendency for grass to die during dry periods in medians and shoulders.
- (b) Only those areas which could be mowed by mechanical means were mowed. Hand mowing of steep banks was eliminated.
- (c) The proportion of the right-of-way width mowed was varied in accordance with the importance of the Highway. This resulted in the most lightly travelled highways having the shoulders only mowed.

Central storage for emulsions used in spray patching was established. This enabled us to purchase this material for a much lower price than it was necessary to pay in the

past, due to purchase in bulk. This, accompanied by a small change in procedure, resulted in a saving of about 26% as compared to the previous year.

Weed spraying was carried on to about the same degree as the previous year with very noticeable results.

The Patrol Headquarters building at Elginfield to serve Patrols 13 and 14 was completed.

Grading and paving of the Patrol Headquarters at Thamesford was carried out by Contract.

Grading and paving of a base for sand pile at Delaware was carried out by District forces. Patrol number nine personnel were transferred to this location from Lambeth.

The picnic areas at Service Centres W5 and W6 were completed.

As usual Hot Mix Patching was done by Contract in scattered locations throughout the District.

#### *Winter Maintenance*

On instructions from Head Office, all our mechanical sanders were calibrated such that when driven at specified speeds, ranging from nineteen to twenty-five miles per hour, a uniform rate of application of 450 pounds per mile of salt was applied. This had a rather astonishing effect on salt usage. As compared with the previous winter, something in the order of a 25% saving appears to have resulted with no appreciable reduction in service rendered.

All Highways in the District were routinely plowed as usual.



Hwy. 59—Bridge construction at Woodstock. Photo 8793—(London)



The program of removal of dead trees on the rights-of-way was carried on as in previous years. The high mortality rate of trees, in particular, elms, however, appears to make this a continuing operation.

### Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
7	C.N.R.	One mile north of Denfield.....	2 flashing light signals and one bell
23	C.N.R.	Biddulph Township, mileage 12.02 Forest Sub- division, approximately 4 miles north of Hwy. 7..	2 flashing light signals and one bell

### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMP.	TONS PLACED
3	Big Creek Bridge at west limits of Delhi....	0.32	1965	—	0.32	1,731
3	Intersection of Hwy. 3 and Cedar Street in Town of Simcoe.....	0.28	1966	Nil	0.28	1,695
4	From 4.9 miles south of Exeter southerly to Clandeboye 4.7 mi.....	4.70	1965	—	4.70	10,026
4	Hwy. 7 southerly 3.4 mi. including chan- nelization of Hwys. 4 and 7.....	4.20	1966	Nil	4.20	6,476
22	Intersection of Hwys. 22 and 81.....	n/a	1966	Nil	n/a	301
24	Intersection of Hwys. 24 and 24A 2.2 mi. north of Hwy. 3.....	n/a	1966	Nil	n/a	1,486
24	From 2.3 mi. north of Hwy. 3 north 10.7 miles to Norfolk/Brant County Line.....	—	—	—	—	720
24A	New York Central Railway overhead 5.6 mi. north of Hwy. 3.....	0.78	1966	Nil	0.78	4,130
81	From Hwy. 7 southerly.....	7.22	1966	Nil	7.22	686
97	From Plattsville easterly 6.13 mi. includ- ing the Hamlet of Washington.....	6.13	1966	Nil	6.13	17,361
401	Black's Lane underpass 7.2 mi. west of Hwy. 76.....	0.38	1966	Nil	0.38	1,077
Vari- ous	Various Locations.....	n/a	1966	Nil	n/a	8,662
	Elginfield Patrol Yard 1 mi. west of inter- section of Hwys. 4 and 7.....	n/a	1966	Nil	n/a	242
2	Patrol Yard on Township Road, one mi. south of Thamesford.....	n/a	1966	Nil	n/a	1,179
2	New Patrol Yard, approximately 2 mi. east of Delaware.....	n/a	1966	Nil	n/a	500
	TOTAL.....	24.01			24.01	56,272

### Bituminous Resurfacing of Old Pavement

HWY. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
2	Eastwood westerly 3.47 mi. to Woodstock.....	3.47	12,160
4	From Lambeth southerly to Hwy. 401.....	3.41	8,396
401	From 0.44 mi. west of Wellington Road, west 5.70 mi.....	5.70	18,184
	TOTAL.....	12.58	38,740

Bituminous Surface Treatment

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BITUMULS USED	TONS CHIPS USED
24	From 2.3 mi. north of Hwy. 3, north 10.7 mi. to Norfolk/Brant County Line.....	10.70	27,280	1,262
	TOTAL.....	10.70	27,280	1,262

Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
24A	New York Central Railway overhead 5.6 mi. north of Hwy. 3.....	1966	1966	1966	Beam and slab
59	Thames River bridge and Canadian Pacific Railway Grade Separation, Devonshire Avenue, northerly to James Street, in the City of Woodstock.....	1966	n/a	n/a	Steel beam and slab
126	Second Concession Road (Pond Mills Road) one-half mi. north of Hwy. 401 under- pass.....	1966	1966	1966	Beam and slab
401	Black's Lane underpass, 7.2 mi. west of Hwy. 76.....	1966	1966	1966	Beam and slab



Hwy. 401—Interchange construction 12 miles west of Hwy. 4 (Iona Station). Photo 8797—(London)

## Concrete Pavement

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES THIS FISCAL YEAR			
				COMPL. PREV. YRS.	MILES SQ. YDS. COMPL. PLACED	PAVEMENT WIDTH	
81	From Hwy. 7 southerly 7.22 mi.....	7.22	1966	Nil	7.22 93,839	22 feet	
	TOTAL.....	7.22			7.22 93,839		

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	Eastwood westerly 3.47 mi. to Woodstock.....	3.47	10,864
3	Big Creek Bridge at west limits of Delhi.....	0.32	428
3	Intersection of Hwy. 3 and Cedar Street in Town of Simcoe.....	0.28	5,528
3	Intersection of Hwys. 3 and 24 in Simcoe 0.54 mi.....	None	7,222
		Complete	
4	From 4.9 mi. south of Exeter, southerly to Clandeboye 4.7 mi.....	4.70	5,187
4	From Lambeth southerly to Hwy. 401.....	3.41	3,740
4	Hwy. 7 southerly 3.4 mi. including channelization of Hwys. 4 and 7.....	4.20	68,848
22	Intersection of Hwys. 22 and 81.....	n/a	758
24	From 2.3 mi. north of Hwy. 3 north 10.7 mi. to Norfolk/Brant County Line.....	10.70	11,044
24	Intersection of Hwy. 24 and 24A, 2.2 mi. north of Hwy. 3.....	n/a	5,327
24A	New York Central Railway overhead 5.6 mi. north of Hwy. 3.....	0.78	18,285
59	Thames River Bridge and C.P.R. grade separation Devonshire Avenue northerly to James Street (Woodstock).....	0.60	4,050
81	From Hwy. 7 southerly 7.22 mi.....	7.22	109,219
97	From Plattsville easterly 6.13 mi., including the Hamlet of Washington....	6.13	13,347
126	Second Concession Road (Pond Mills Road) one half mi. north of Hwy. 401.....	0.87	9,938
401	From 0.44 mi. west of Wellington Road west 5.70 mi.....	5.70	19,486
401	Black's Lane underpass 7.2 mi. west of Hwy. 76.....	0.38	3,988
2	Patrol Yard on Township Road, 1 mi. south of Thamesford.....	n/a	2,052
2	New Patrol Yard approximately 2 mi. east of Delaware.....	n/a	1,000
Vari- ous	Various Locations.....	n/a	7,427
	TOTAL.....	48.76	307,738

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
3	Junction Hwy. 24, Town of Simcoe.....	—	9.0
4	Junction Hwy. 7, southerly 3.44 mi. and channelization.....	—	72.0
7	D.H.O. yard, Elginfield (Junction Hwys. 4 and 7).....	—	366.0
24	Intersection Hwy. 24A—2.2 mi. north of Hwy. 3.....	—	42.0
73	2 mi. north of Aylmer.....	—	252.0
73	Catfish Creek—Port Bruce.....	—	48.0
81	Hwy. 7 southerly 7.22 mi.....	—	513.0
81	Front Street, Town of Strathroy.....	—	547.5
81	Hwy. 7 southerly 6.5 mi.....	—	163.5
97	Plattsville Easterly 6.13 mi.....	—	112.5
401	Interchange—Hwy. 76.....	—	54.0
401	Bostwick Road underpass (Township of Westminster).....	—	105.0
401	3.1 mi. west of Hwy. 76.....	—	63.6
	TOTAL.....		2,348.1

## Grading and Culverts

HWY. No.	LOCATION	MILES IN	YEAR	MILES	MILES
		JOB	BEGUN	COMPL. PREV. YRS.	COMPL. THIS YEAR
3	Intersection of Hwy. 3 and Cedar Street in Town of Simcoe .....	0.28	1966	Nil	0.28
3	Intersection of Hwys. 3 and 24 in Town of Simcoe .....	0.54	1966	Nil	0.54
4	Hwy. 7 southerly 3.4 mi., including channelization of Hwys. 4 and 7 .....	4.20	1966	Nil	4.20
7	Intersection improvement at County Road 17 southwest of Parkhill .....	1.30	1967	Nil	Nil
22	Intersection of Hwys. 22 and 81 .....	n/a	1966	Nil	Complete
24	Intersection of Hwys. 24 and 24A, 2.2 mi. north of Hwy. 3 .....	n/a	1966	Nil	Complete
24A	New York Central Railway overhead, 5.6 mi. north of Hwy. 3 .....	0.78	1966	Nil	0.78
24T	From Hwy. 24 in Waterford to Hwy. 24A .....	2.40	1966	Nil	1.00
59	Thames River Bridge and Canadian Pacific Railway grade separation, Devonshire Avenue, northerly to James Street (Woodstock) .....	0.60	1966	Nil	0.30
81	From Hwy. 7 southerly 7.2 mi. ....	7.21	1966	Nil	7.21
97	From Plattsville easterly 6.13 mi. including the Hamlet of Washington (0.20 mi. completed this year on Contract 65-147) (5.93 mi. completed previous year on Contract 64-04) .....	0.20	1966	5.93	0.20
126	Second Concession Road (Pond Mills Road) one half mi. north of Hwy. 401 .....	0.87	1966	Nil	0.87
401	Black's Lane underpass 7.2 mi. west of Hwy. 76 .....	0.38	1966	Nil	0.38
2	Patrol Yard on Township Road, one mi. south of Thamesford .....	n/a	1966	Nil	Complete
TOTAL .....		18.76		5.93	15.76

## Granular Base on New Grading

HWY. No.	LOCATION	MILES	YEAR	MILES	THIS FISCAL YEAR	
		IN JOB	BEGUN	COMPL. PREV. YEARS	MILES COMPL.	TONS PLACED
3	Intersection of Hwy. 3 and Cedar Street in Town of Simcoe .....	0.28	1966	Nil	0.28	13,103
3	Intersection of Hwys. 3 and 24 in Town of Simcoe .....	0.54	1966	Nil	0.54	11,762
4	Hwy. 7 southerly 3.4 mi. including channelization of Hwys. 4 and 7 .....	4.20	1966	Nil	4.20	136,376
22	Intersection of Hwys. 22 and 81 .....	n/a	1966	Nil	Complete	791
24	2.3 mi. north of Hwy. 3, northerly 10.7 mi. to Norfolk/Brant County Line .....	10.70	1966	Nil	10.70	5,600
24	Intersection of Hwys. 24 and 24A, 2.2 mi. north of Hwy. 3 .....	n/a	1966	Nil	Complete	10,880
24A	New York Central Railway overhead, 5.6 mi. north of Hwy. 3 .....	0.78	1966	Nil	0.78	18,584
24T	From Hwy. 24 in Waterford to Hwy. 24A .....	2.40	1966	Nil	0.50	7,370
59	Thames River Bridge and Canadian Pacific Railway grade separation, Devonshire Avenue northerly to James Street (Woodstock) .....	0.60	1966	Nil	0.10	3,395
81	From Hwy. 7 southerly 7.2 mi. ....	7.21	1966	Nil	7.21	3,777
97	From Plattsville easterly 6.13 mi. including the Hamlet of Washington (0.20 mi. completed this year on Contract 65-147) (5.93 mi. completed previous year on Contract 64-04) .....	6.13	1966	5.93	6.13	6,414



126	Second Concession Road (Pond Mills Road) one half mi. north of Hwy. 401.....	0.87	1966	Nil	0.87	110,521
2	Patrol yard on Township Road, one mi. south of Thamesford.....	n/a	1966	Nil	Complete	4,923
2	New patrol yard, approximately 2 mi. east of Delaware.....	n/a	1966	Nil	Complete	2,000
TOTAL.....		33.71		5.93	31.31	335,496

### New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
7	0.5 mi. west of junction of Hwys. 7 and 4 (Elginfield).....	Patrol	Patrol	1966	October, 1966
401	One quarter mi. south of junction of Hwy. 401 and Sweaburg Road.....	Patrol Office (addition to original building)	Patrol Office, Lunchroom and Tool Room, Garage	1966	February, 1967
401	Service Centre W3—situate 2 mi. east of junc- tion Hwys. 401 and 19—north side.....	Toilet facilities		1966	1966
401	Service Centre W4—situate 3 mi. east of junc- tion Hwys. 401 and 19—south side.....	Toilet facilities		1966	1966

### Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	13	—	—
Calcium dust layer on gravel roads.....	—	6½	—
Development roads built.....	n/a	—	—
Off-road parks maintained.....	13	—	—
Roads snowploughed and kept open, King's Highways.....	20	—	771.93
Roads snowploughed and kept open, secondary highways.....	—	—	—
Roadside picnic places maintained.....	32	—	—
Routine maintenance, King's Highways.....	20	—	771.93
Salt for de-icing roads.....(raw)	—	16,167	—
Salt in sand, stockpiled.....	—	1,437	—
Sand for winter maintenance.....(cubic yards)	40,275	—	—
Scale houses maintained.....	2	—	—
Seeding by department's forces.....(acres)	121	—	—
Shrubs received and planted this year.....	5,117	—	—
Signs erected or replaced.....	3,476	—	—
Snow fence erected, dismantled, stored.....	—	—	111.8
Snow hedges planted this year.....	—	—	.5
Weed control.....(gals.)	866	—	966
Zone painting on King's Highways.....(gals.)	10,631	—	1,220

**DISTRICT No. 3 — STRATFORD****J. G. Tillcock, P.Eng., District Engineer****CONSTRUCTION**

The 1966 construction season in Stratford District saw the completion of six carry-over contracts and seven new contracts. Work commenced on two contracts which will be carried over and completed during the 1967 construction season.

Final trimming completed the Teeswater Bridge on Highway Number 4 at Teeswater.

Paving this year completed the work in the Village of Rockwood, Highway 7.

Final trimming completed the Dredge Creek Structure and Approaches at the west limits of the Town of Harriston on Highway 9.

With the exception of trimming, work was completed on grading, drainage and granular from 5.8 miles east of Elmira to Highway 7 on Highway 86.

With the exception of trimming and top course paving, work was completed on Highway 23 from one mile south of Monkton to Newry. This work included extensive widening, storm sewer and curb and gutter throughout the Village of Monkton.

With the exception of top course paving and trimming, work was completed on the John Hanna Memorial Bridge on Highway 4 in the Town of Wingham.

Intersection improvement was carried out on Highway 136 in the Village of Alton.

Improvement to the K-Mart Entrance was completed on Highway 8 north of Highway 401.

Resurfacing was completed from Seebach Hill to Mitchell on Highway 8, from Dorking to 1.2 miles west of Tralee on Highway 86, from Molesworth westerly to County Road 12 on Highway 86 and the New Hamburg By-Pass on Highway 8. This is a total of 24.8 miles resurfacing.

Hot mix patching was carried out on Highway 8 from Kitchener west limits to Shakespeare and Clinton west limits to 1.4 miles east of Goderich on Highway 8.

The work of clearing commenced on grading, drainage, granular base and hot mix paving from Exeter north limits northerly 7.25 miles on Highway 4.

Clearing and placing concrete culverts commenced on a grading, drainage, granular base and hot mix paving contract from Stratford south limits southerly for 6.0 miles on Highway 7.

**MAINTENANCE**

Routine Maintenance was carried out on 645 miles of King's Highways and 40 miles of Connecting Links, Ontario Hospital roads, etc.

Hot Mix Patching by Contract was carried out on Highway 8 between Clinton and Goderich.

Department forces removed 1,666 dead and dangerous trees. 666 diseased Elms, and 671 other dangerous trees were removed by Contract.

3,075 trees and shrubs were planted.

Department forces seeded 163 acres which included 75 acres on Development Roads. 25 off-road parks and 88 roadside picnic places were maintained. 4,463 signs were erected and replaced.

Chemical Weed Control was carried out on approximately 530 miles of Highway. Approximately 5 miles of Snow Hedge was thinned and trimmed to a uniform height.

Zone Painting was carried out on approximately 670 miles of road, 9,811 gals. of paint being used.

The Sign and Building Section issued the following permits:

- Buildings and Structures—398
- Encroachments — 59
- Entrances —169
- Signs (new) —161

Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
89	C.P.R.	1.0 mi. North of Harriston.....	Flashing light signals and bell.



Hwy. 86—Paving west of Molesworth. Photo 8353—(Stratford)

Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
				COMPL. PREV. YEARS		
7	Village of Rockwood.....	0.35	1966	—	0.35	2,555
23	From one mi. south of Monkton northerly to County Road 6, Newry.....	6.70	1966	—	6.70	6,850
136	At the intersection of Hwy. 136 in the Village of Alton.....	0.05	1966	—	0.05	69
8	Entrance to K-Mart Shopping Centre north of Macdonald-Cartier Freeway (Hwy. 401).....	—	1966	—	—	148
87 and 89	Dredge Creek at west limits, Town of Harris- ton.....	0.21	1965	—	0.21	706
4	Hanna Memorial Bridge, North Branch of Maitland River (Town of Wingham).....	0.43	1966	—	0.43	1,900
	TOTAL.....	7.74			7.74	12,228

Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
25	From junction of Hwys. 25 and 24 to 5.5 mi. south.....	5.50	16,638	384
	Total.....	5.50	16,638	384

Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			TONS PLACED	
8	From Clinton west limits to 1.4 mi. east of Goderich east limits.....	0.90	1,330	
86	From Molesworth westerly to County Road 12.....	6.41	11,930	
86	From Dorking to 1.2 mi. west of Tralee.....	5.90	13,785	
7				
and 8	Part "A" New Hamburg Diversion.....	6.60	13,720	
	Part "B" from Kitchener to New Hamburg Diversion to 0.8 mi. east of Shakespeare.....	2.90	4,000	
8	From 0.29 mi. east of Seebach Hill to Mitchell east limits.....	5.89	18,185	
	TOTALS.....	28.60	62,950	

Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED	TYPE OF STRUCTURE
				TO TRAFFIC	
4	Hanna Memorial Bridge, North Branch of Maitland River (Town of Wingham).....	1966	1966	1966	Reinforced Concrete



## Crushed Gravel and Stone on Roads by Contract

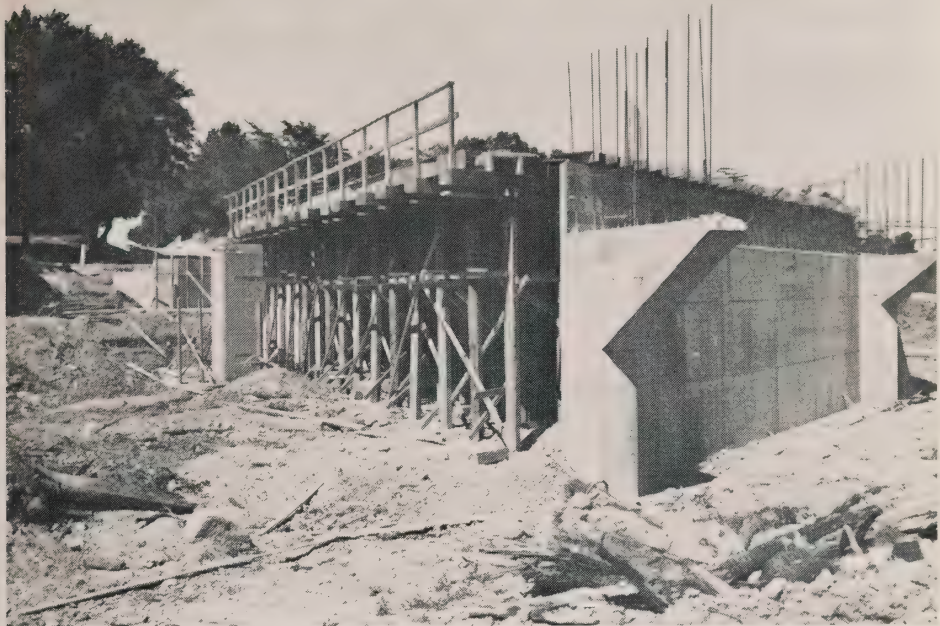
Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
86	D.H.O. Yard at Lucknow.....	—	10,012
8	From Clinton west limits to 1.4 mi. east of Goderich east limits.....	0.90	1,000
86	From Molesworth westerly to County Road 12.....	6.41	17,300
86	From Dorking to 1.2 mi. west of Tralee.....	5.90	25,596
7			
and 8	Part "A" New Hamburg Diversion.....	6.60	11,874
	Part "B" from Kitchener to New Hamburg Diversion to 0.8 mi. east of Shakespeare.....	2.90	3,055
4	D.H.O. Yard at Exeter.....	—	4,995
8	D.H.O. Yard at Clinton.....	—	9,995
8	From 0.29 mi. east of Seebach Hill to Mitchell east limits.....	5.89	21,900
	TOTALS.....	28.60	105,727

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
4	Exeter-Clinton (various locations).....	—	429
6	Guelph-Mount Forest (various locations).....	—	491
7	Guelph-St. Marys (various locations).....	—	272
8	Galt-Clinton (various locations).....	—	184
9	Orangeville-Clifford (various locations).....	—	430
10	Orangeville-Dundalk (various locations).....	—	772
19	Stratford-Tralee (various locations).....	—	60
21	Grand Bend-Amberly (various locations).....	—	381
23	Whalens-Teviotdale (various locations).....	—	201
24	Guelph-Erin (various locations).....	—	1,319
25	Ospringle-Acton (various locations).....	5.3	1,000
83	Russeldale-Brewster (various locations).....	—	2,091
84	Hensall-St. Joseph (various locations).....	—	200
85	Waterloo-Elmira (various locations).....	—	58
86	Guelph-Amberly (various locations).....	—	288
87	Harriston-Bluevale (various locations).....	—	45
89	Shelburne-Mt. Forest (various locations).....	—	300
	TOTAL.....	5.3	8,521

## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	
				COMPL. PREV. YRS.	COMPL. THIS YEAR
7	Village of Rockwood.....	0.35	1966	—	0.35
86	From 5.80 mi. east of Elmira to Junction Hwy. 7.....	7.79	1965	—	7.79
23	From one mi. south of Monkton northerly 6.70 mi. to County Road 6 (Newry).....	6.70	1966	—	6.70
136	At the intersection of Hwy. 136 in the Vil- lage of Alton.....	0.05	1966	—	0.05
8	Entrances to K-Mart Shopping Centre north of Macdonald-Cartier Freeway (Hwy. 401).....	—	1966	—	—
4	Hanna Memorial Bridge, north Branch of Maitland River, Town of Wingham.....	0.43	1966	—	0.43
	TOTALS.....	15.32			15.32



Hwy. 4—Hannah Memorial Bridge construction at Wingham. Photo 8352-A—(Stratford)

Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES		
				COMPL. PREV. YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
7	Village of Rockwood.....	0.35	1965	—	0.35	15,255
86	From 5.80 mi. east of Elmira to Junction Hwy. 7.....	7.79	1965	—	7.79	347,000
23	From one mi. south of Monkton northerly 6.70 mi. to County Road 6 Newry.....	6.70	1966	—	6.70	335,140
136	At the intersection of Hwy. 136 in the Village of Alton .....	0.05	1966	—	0.05	840
8	Entrance to K-Mart Shopping Centre north of Macdonald-Cartier Freeway Hwy. 401.....	—	1966	—	—	1,300
87 and 89	Dredge Creek at west limits Town of Harris- ton .....	0.21	1965	—	0.21	10,958
4	Hanna Memorial Bridge, North Branch of Maitland Riter, Town of Wingham.....	0.43	1966	—	0.43	24,610
4	Teeswater River Bridge at Teeswater.....	0.19	1965	—	0.19	7,980
87	Dredge Creek at Harriston.....	0.21	1965	—	0.21	10,960
TOTALS.....		15.93			15.93	754,043

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
89	Mount Forest Patrol Yard Lot 1, Con. 2, Twp. of Arthur.....	120A Salt Shed	Salt Storage	1966	1966
		120A Salt Shed	Equipment Storage		
6	Arthur Patrol Yard.....	Concrete Block	Office Lunch Room Tool Room	1966	—
21	Goderich Patrol Yard (Meneset).....	Concrete Block	Office Lunch Room Tool Room	1966	—

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Calcium dust layer on gravel roads.....	—	25.6	—
Off-road parks maintained.....	25	—	—
Roads snowploughed and kept open, King's Highways.....	20	—	685
Roadside picnic places maintained.....	88	—	—
Routine maintenance, King's Highways.....	20	—	685
Salt for de-icing roads.....(raw)	—	17,662	—
Salt in sand, stockpiled.....	—	1,986	—
Sand for winter maintenance.....	—	58,485	—
Scale houses maintained.....	1	—	—
Seeding by department's forces.....(acres)	163*	—	—
Shrubs received and planted this year.....	1,400	—	—
Signs erected or replaced.....	4,463	—	—
Snow fence erected, dismantled, stored.....	—	—	104.4
Traffic lights installed this year.....	1	1	1
Weed control.....	—	—	531
Zone painting on King's Highways.....(gals.)	9,811	—	—

\*D.H.O. 88 acres—Dev. Roads 75 acres

**DISTRICT No. 4 — HAMILTON****H. Greenland, P.Eng., District Engineer****CONSTRUCTION**

A 6.3 mile section of Highway 403 by-passing the City of Brantford was opened to traffic in November. Meanwhile work continued on another section of Highway 403 up the escarpment in Hamilton, and a contract was awarded on the next 3.5 mile section from Mohawk Road westerly.

Under Connecting Link Agreement in the City of Hamilton the intersection of Highways 2 and 8, Main Street West, was reconstructed.

Work was started on 9 miles of resurfacing Highway 24 south of Brantford, while nearby the channelizations at Brant County Road 23 and Highway 24 were completed.

Under Connecting Link Agreement in the City of Brantford Highway 24 from Eastbourne Avenue to the north City Limits was reconstructed.

Granular base in preparation of the concrete paving was placed on Highway 24-A from Scotland to Highway 53 and a contract was awarded for the construction of a new structure over the Grand River, Highway 2, at Paris.

Under Connecting Link Agreement reconstruction of Highway 24-A, in Paris, from Emily Street to the north Town Limits was commenced.

Reconstruction of Highway 99 from the Brant County Line to Highway 24 was completed.

Additional safety was provided at the Burlington Bay Skyway with the completion

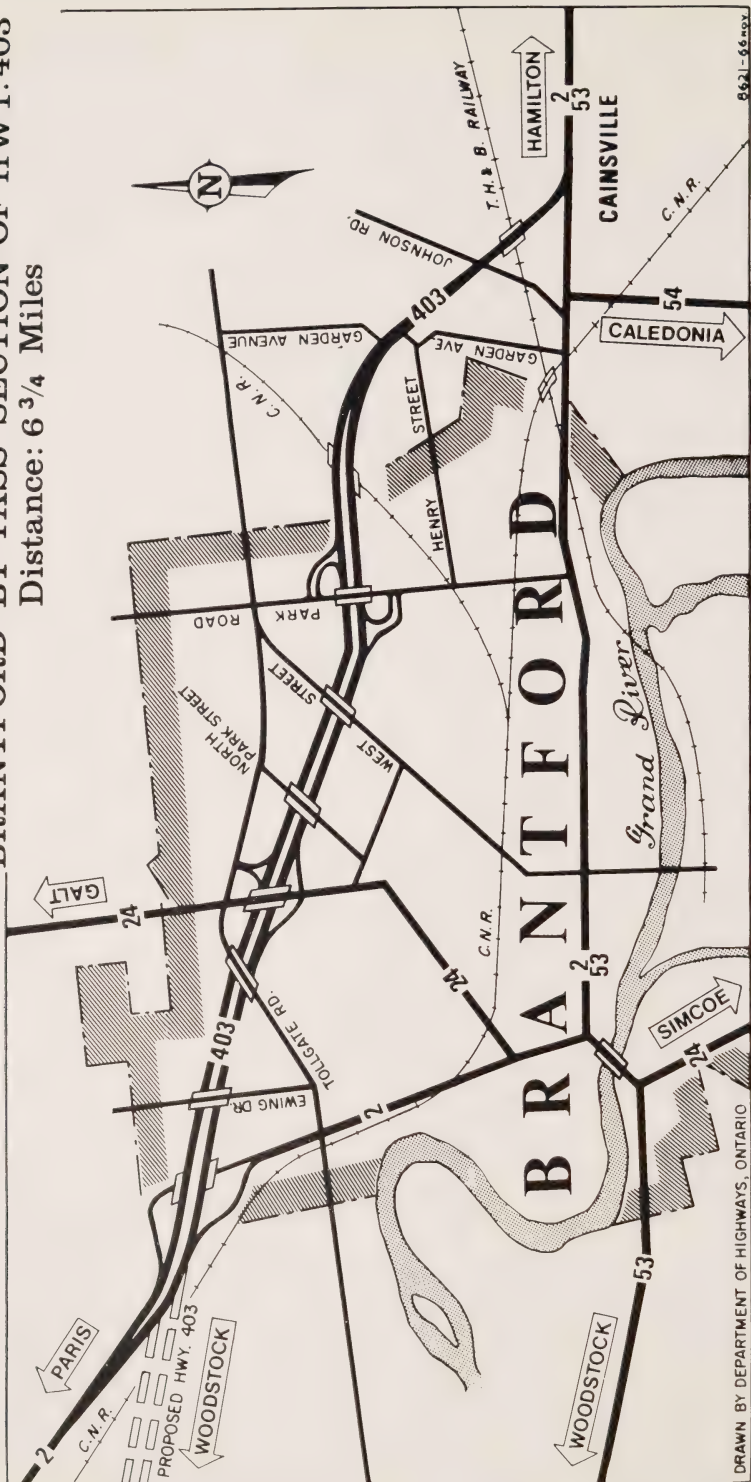


Hwy. 406—Structure south of Geneva Street, St. Catharines. Photo 8072 —(Hamilton)



# BRANTFORD BY-PASS SECTION OF HWY. 403

Distance: 6 <sup>3</sup>/<sub>4</sub> Miles



DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO

8621-56 NOV

of 4 miles of median guide rail installation. The Waterdown Bridge on Highway 5 and the Hunt Street Bridge over the C.P.R. in Hamilton were completed while nearby on Highway 6 a contract for grading and paving was awarded from Puslinch to Aberfoyle. Construction was completed on a new Niagara Falls leg connecting Highway 403 and the Q.E.W. at Freeman and, in addition, the south service road turning basin was completed at this location.

In Milton, under Connecting Link Agreement, the intersection of Highway 25 and Ontario Street was reconstructed.

Work on the first section of the Kitchener-Waterloo Expressway progressed favourably in the vicinity of King Street and two contracts for relocation of utilities were awarded.

During 1966 the Vineland Interchange on the Q.E.W. and a short section of south service road at Kelson Avenue and the Q.E.W. were completed. Further east on the Q.E.W. a resurfacing contract was awarded for paving from Highway 405 to Highway 20.

In St. Catharines service roads were completed at Lake Avenue and a contract was awarded for the construction of the Ontario Street—Q.E.W. Interchange.

The deck of the south bound structure carrying the Q.E.W. over the Michigan Central Railway 5 miles north of Fort Erie was replaced.

Under Connecting Link Agreement in the City of St. Catharines reconstruction of Niagara Street from Church Street to Trapnell Street was commenced.

In Niagara Falls reconstruction was started on the Q.E.W. extension at Falls Avenue to channelize the traffic in the vicinity of the Rainbow Bridge Plaza.

Grading of Highway 8 south of St. Davis commenced in conjunction with the replacement of the C.N.R. Subway. A channelization at Highway 20 and Pelham Road in Fonthill was completed. At Allanburg a contract for the reconstruction of 1.8 miles of Highway 20 was awarded.

Six miles of 4 lane construction on Highway 3 from Fort Erie westerly continued and is expected to be completed early next year.

The Thorold Tunnel construction continued with the contractor ahead of schedule.

Construction of 1.25 miles of Highway 58 from Collier Road to the west portal of the tunnel was well advanced by the end of this construction season.

#### MAINTENANCE

There were 884 miles of King's highways maintained in Hamilton District for the fiscal year 1966-67. The increase was due to the completion of the 4 lane Brantford-By-Pass i.e. Highway 403.

A section of the Burlington Bay Skyway Bridge was painted under contract each year. The first contract was let in 1963 and the last contract was completed in October 1966. The painting of handrails of smaller bridges by District Patrol Forces was continued.

There was approximately 14,300 gallons of zone paint applied by the District's two zone painting crews. This includes the yellow edge line for which we have received many complimentary remarks.

Six locations had new traffic lights installed.

Pavement patching by three contracts placed 26,300 tons of hot mix asphalt throughout the district. 2900 tons of asphalt were laid by District forces.

Surface treatment by contract was carried out on 32 miles of highway.

District forces applied 24,140 tons of crushed stone on 611 miles of highway shoulder.

The District forestry crew seeded 113 acres of highway right-of-way and planted 1344 trees and shrubs. A very successful weed spraying programme was carried out on 256 miles of highway. A new weed spraying unit with a longer full hydraulic boom was used giving a greater ground coverage. The spray is applied closer to the ground and cuts down ground drift. The crew removed 977 dead and/or dangerous trees—which includes the diseased elms.

The District sign shop erected or replaced 7,558 signs, an increase of 46% over last year.

A gabion retaining wall was built by District forces to prevent slippage of a granular bridge approach onto the railway tracks at the T.H. & B. railway on Highway 20. The District erected 366 rods of farm fence to complete options and finish patrol yards. A contract to repair 70 rods of chain link fence was completed.

A new Patrol Office near Palermo was built by the District carpenters; a 5 bay metal patrol garage near Wainfleet was built by contract, plus two comfort stations at the service centres on Highway 401.



Hwy. 403—Aerial view of Brantford By-pass section. Photo 8661—(Hamilton)



The first travellette in the District was used for patrol work on the Q.E.W. It was found to be very satisfactory for transporting men to small projects where material and equipment can be carried in the back. It is easier to handle in the fast traffic than the large 3 ton truck.

The first liquid calcium chloride contract for dust control on the shoulders was found to be more satisfactory than the bagged calcium because of the speed of application on a large mileage and the immediate results obtained.

74,446 tons of treated sand and 13,038 tons of raw salt were spread on the King's highways during the winter season. There was an increase in the amount of sand and salt as raw chemical over last year due to the numerous storms of short duration. Most of the storms came after December 24 and our ploughs did not work as many hours as in past winters.

A new 4 wheel drive 2 cubic yard capacity loader with a snow blower attachment was used to remove windrows of snow on the two Skyway Bridges and interchange bridges. In past years we used one of the Department's large snow blowers, but this new loader with blower attachment being smaller is easier to handle and less cost to operate.

#### Bituminous Hot Mix Pavement

Hwy. No.		MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
2, 6	Intersection Old Guelph Road and York Boulevard, Hamilton.....	—	1966	Nil	—	179
3	Fort Erie west limits southerly to Goder- ich Street.....	0.64	1966	Nil	0.64	5,254
3	Fort Erie westerly to County Road 28....	4.00	1964	2.64	1.36	26,209
5	Grindstone Creek Bridge, Waterdown....	0.10	1966	Nil	0.10	686
20	Pelham Street Interchange, Fonthill.....	0.30	1966	Nil	0.30	1,401
24	Junction Hwy. 24 and Brant County Road 23.....	0.38	1966	Nil	0.38	1,779
24A	Hwy. 53 southerly 8.66 mi.....	1.47	1966	Nil	1.47	489
53	C.N.R. subway, south of Eastwood.....	0.86	1966	Nil	0.86	1,043
58	0.5 mi. west of Collier Road easterly 1.3 mi.....	0.26	1966	Nil	0.26	481
85	From Doon Road to Block Line Road, Kitchener.....	0.62	1966	Nil	0.62	28,396
99	From Hwy. 24 easterly 3.36 mi.....	3.36	1964	2.69	0.67	1,754
403	Cainsville to west limits Brantford, junction of Hwy. 2.....	6.32	1966	Nil	6.32	75,675
403	At Q.E.W. interchange to Hamilton- Niagara Falls ramp.....	0.54	1966	Nil	0.54	3,898
Q.E.W.	Vineland interchange.....	0.66	1965	0.16	0.50	5,682
Q.E.W.	Lake Street interchange, St. Catharines..	1.20	1966	Nil	1.20	4,076
Q.E.W.	4.4 mi. west of Fort Erie.....	0.22	1966	Nil	0.22	154
Q.E.W.	Ontario Street interchange, St. Cathar- ines.....	0.27	1966	Nil	0.27	4,215
	TOTALS.....	21.20		5.49	15.71	161,371

#### Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR GALLONS BIT. USED	TONS SAND USED
24A	Restacres Road.....	3	4,945	125.10



### Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
24	Brantford south limits to Brant-Norfolk County line.....	2.03	6,993

### Bituminous Surface Treatment

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BITUMULS USED	TONS CHIPS USED
24	Brantford south limits southerly to Brant-Norfolk County line.....	2.23	13,936	607

### Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
5	Grindstone Creek, Waterdown.....	1965	1966	1966	Continuous girder
24A	C.N.R. subway, Paris.....	1966	1966	1966	Steel girder
53	C.N.R. subway, Eastwood.....	1966	1966	1966	Steel girder
58	Pine Street, Thorold, underpass.....	1966	1966	—	Post stress concrete
58	Queen Street, Thorold, underpass.....	1966	1966	1966	Post stress concrete
58	Collier Road, Thorold, overpass.....	1966	1966	1966	Post stress concrete
58	Thorold Tunnel under Welland Canal.....	1966	—	—	Tunnel
Off of 403	Hunt Street, Hamilton.....	1966	1966	1966	Steel girder
403	Golf Links Road, Ancaster.....	1966	1966	—	Post stress concrete
435	King Street, Kitchener, overpass.....	1966	1966	1966	Post stress concrete
435	First Avenue, Kitchener, overpass.....	1966	1966	1966	Post stress concrete
435	East Avenue, Kitchener, overpass.....	1966	1966	1966	Post stress concrete
Q.E.W. 451	4.4 mi. north of Fort Erie—N.Y.C. and C.N.R.....	1966	1966	1966	Continuous steel girder
Q.E.W. 451	County Road 22 to Vineland, underpass.....	1966	1966	1966	Post stress concrete
Q.E.W. 451	County Road 22 over South Service Road....	1966	1966	1966	Post stress concrete



Hwy. 403—Rock excavation at Filman Road, Hamilton. Photo 8833—(Hamilton)

### Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2, 6	Intersection of York Boulevard and Old Guelph Road, Hamilton.....	0.10	289
3	Fort Erie westerly to County Road 28.....	6.70	204,084
3	Fort Erie west limits southerly to Goderich Street.....	0.57	19,517
5	Grindstone Creek, Waterdown.....	0.04	202
6	Aberfoyle southerly to County Road 18.....	0.11	1,292
8	Approaches to C.N.R. overpass, south of St. Davids.....	0.01	1,831
20	Pelham Street intersection, Fonthill.....	0.30	5,596
24	Intersection improvement at Brant County Road 23.....	0.38	3,690
24A	From Hwy. 53 southerly 8.41 mi.....	7.74	85,759
53	C.N.R. subway Eastwood.....	0.86	4,170
58	Thorold tunnel approaches.....	0.42	11,744
58	0.5 mi. west of Collier Road easterly 1.3 mi.....	0.06	6,515
85	From Doon Road to Block Line Road, Kitchener.....	1.31	70,314
99	From Hwy. 24 easterly 3.36 mi.....	0.95	2,057
403	T.H. & B. Railway, Hamilton to Mohawk Road, Ancaster.....	0.45	58,300
403	Hwy. 2 Cainsville to Hwy. 2 west limits of Brantford.....	3.27	54,075
403	Q.E.W. interchange, revision to service road, Burlington.....	0.10	3,011
Q.E.W.	County road to Vineland, 6.1 mi. west of St. Catharines.....	0.29	70,305
Q.E.W.	Lake Street interchange and service roads, St. Catharines.....	0.56	3,237
Q.E.W.	Revision to Hamilton-Niagara Falls ramp, Burlington.....	0.04	427
Q.E.W.	4.4 mi. west of Fort Erie.....	0.22	822
Q.E.W.	Ontario Street interchange, St. Catharines.....	0.83	76,413
Q.E.W.	South service road at Kelson Avenue, Grimsby.....	0.10	4,238
TOTALS.....		25.41	687,888

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	Halton-Peel County Line to Eastwood.....	53.00	2,295
3	Fort Erie to Jarvis.....	72.78	4,221
3A	Chambers Corners to Welland.....	9.38	587
3C	Ridgeway to Fort Erie.....	6.79	147
5	Halton-Peel County Line to Paris.....	31.23	2,681
6	Jarvis to junction Hwys. 6 and 401.....	38.96	620
7	Halton-Peel County Line to 2.82 mi. west of Acton.....	11.26	128
8	Galt-Niagara Falls.....	57.80	1,757
8A	Queenston-St. Davids.....	2.80	273
20	Blackhorse Corners to junction Hwy. 8, Hamilton.....	40.34	2,843
24	Norfolk-Brant County Line to Galt.....	20.86	154
24A	Paris to Galt.....	9.65	829
25	Junction Q.E.W. to Acton.....	24.00	126
52	Junction Hwy. 2 to Wellington-Wentworth County Line.....	13.93	304
53	Junction Hwy. 56 to Hamilton east limits.....	2.43	1,435
53	Hamilton west limits to junction Hwys. 2 and 53.....	5.10	
54	Junction Hwy. 3 to junction Hwy. 2 Cainsville.....	26.90	689
56	Elfrida to junction Hwy. 3.....	14.74	372
57	Bismarck to junction Hwy. 3A.....	8.92	9
58	Junction Hwy. 3 to Thorold.....	14.91	652
97	Galt to Freelon.....	13.67	126
99	Dundas to junction Hwy. 24.....	15.80	127
122	Junction Hwy. 122 and Q.E.W. to Halton-Peel County Line.....	2.56	25
401	Junction Hwy. 25 to junction Hwy. 8.....	28.49	413
405	Junction Q.E.W. to Queenston.....	5.53	—
Q.E.W.	From Fifth Line Toronto Township to Fort Erie.....	79.70	3,327
TOTALS.....		611.53	24,140

## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	MILES COMPL.
				PREV. YRS.	THIS YEAR
3	From Fort Erie west limits southerly to Goderich Street.....	0.64	1966	Nil	0.64
3	Fort Erie westerly to County Road 28, Gorham Road.....	6.70	1964	0.20	6.15
6	From Aberfoyle southerly to County Road 18	5.50	1966	Nil	0.33
8	Approaches to C.N.R. subway, south of St. Davids.....	0.63	1966	Nil	0.51
20	Pelham Street Channelization, Fonthill.....	0.30	1966	Nil	0.30
24	Hwy. 24 and Brant County Road 23 intersection	0.38	1966	Nil	0.38
24A	From Hwy. 53 southerly 8.4 mi.....	8.40	1966	Nil	8.40
53	Approaches to C.N.R. subway, south of Eastwood.....	0.86	1966	Nil	0.86
58	Thorold tunnel approaches.....	0.65	1965	Nil	0.56
58	0.5 mi. west of Collier Road, Thorold, easterly 1.3 mi.....	1.30	1966	Nil	0.65
85	From Doon Road to Block Line Road, Kit-chener.....	1.70	1966	Nil	1.70
403	T.H. & B. Railway, Hamilton, westerly.....	1.81	1965	Nil	1.08
403	From Hwy. 2 Cainsville to Hwy. 2 west limits of Brantford.....	6.32	1965	6.06	0.26
Q.E.W.	County Road to Vineland, 6.1 mi. west of St. Catharines.....	0.66	1965	0.37	0.29
Q.E.W.	Lake Street interchange and service roads, St. Catharines.....	1.20	1965	0.50	0.70
Q.E.W.	Ontario Street interchange, St. Catharines.....	1.03	1966	Nil	1.03
TOTALS.....		38.08		7.13	23.84

## Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	THIS FISCAL YEAR	
				PREV. YRS.	MILES COMPL.	TONS PLACED
3	Fort Erie westerly to County Road 28....	6.70	1964	2.78	3.92	19,869
3	Fort Erie west limits southerly to Goderich Street.....	0.64	1966	Nil	0.64	4,319
6	From Aberfoyle southerly to County Road 18.....	5.50	1966	Nil	0.39	1,148
24	Intersection Hwy. 24 and Brant County Road 23.....	0.38	1966	Nil	0.38	12,108
24A	From Hwy. 53 southerly 8.66 mi.....	8.66	1966	Nil	4.58	24,157
53	C.N.R. subway, south of Eastwood.....	0.86	1966	Nil	0.86	7,478
85	From Doon Road to Block Line Road, Kitchener.....	1.70	1966	Nil	1.22	31,862
403	Hwy. 2 Cainsville westerly to Hwy. 2 west limits of Brantford.....	6.32	1965	3.78	2.54	5,525
403	T. H. & B. Railway, Hamilton to Mohawk Road, Ancaster .....	1.81	1965	Nil	1.08	3,830
Q.E.W.	Ontario Street interchange, St. Catharines	1.03	1966	Nil	0.55	13,498
TOTALS.....		33.60		6.56	16.16	123,794

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
25	Palermo patrol yard.....	Frame	Temporary patrol office	1965	1966
3	Burnaby yard.....	Metal	5 Bay patrol garage	1965	1966

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	1	—	—
Off-road parks maintained .....	3	—	—
Roads snowploughed and kept open, King's highways.....	26	—	884
Roads snowploughed and kept open, service roads.....	—	—	3
Roadside picnic places maintained.....	84	—	—
Routine maintenance, King's highways.....	26	—	884
Routine maintenance, service roads.....	—	—	3
Salt for de-icing roads (raw).....	—	13,038	—
Salt in sand, stockpiled.....	—	6,608	—
Sand for winter maintenance .....	—	74,446	—
Scale houses maintained.....	5	—	—
Seeding by department's forces.....(acres)	113	—	—
Shrubs received and planted this year.....	1,344	—	—
Signs erected or replaced .....	7,558	—	—
Snow fence erected, dismantled, stored.....	—	—	55.6
Traffic lights installed this year.....	6	—	—
Weed control.....	—	—	256.5
Zone painting on King's highways.....(gals.)	14,304	—	—



**DISTRICT No. 5 — Owen Sound****H. F. Gilbert, P.Eng., District Engineer**

During the 1966-67 Construction Season, many of our Contracts were completed and several begun. The excellent construction weather resulted in relatively few "lost" days so that most of our Contracts were completed ahead of schedule.

We had three structure contracts, two of which were carried over into 1967, and the Willow Creek Bridge which was completed in 1966. This structure, located on old Highway 11, north of Barrie, adequately handles a widely fluctuating quantity of water as the creek is susceptible to flash storms.

A second structure carrying St. Vincent Street traffic over Highway 400 at Barrie will eliminate a hazardous turning movement as this is the scene of many fatalities in the past years. A feature of this post-tensioned pre-stressed structure is the parabolic eye-pleasing shape of the underdeck. This structure is to be the prototype of several bridges in the Toronto area.

The third structure over the Beaver River in Thornbury will be completed during the 1967 summer. The tube piles, on which this structure is founded, were churn-driven through a dense bouldery clay fill, then filled with concrete.

Extensive repairs were also carried out on the Edenvale Structure over the Nottawasaga River.

A Grading, Drainage, Granular Base & Paving Contract was begun late in 1966 covering from Highway 6 in Durham easterly along Highway 4 for 2.5 miles. A sharp "S" curve under the C.P.R. railway will be eased by this reconstruction.

The paving of Highway 6 from Hepworth to Wiarton completed reconstruction begun under a previous year's grading contract.

Short contracts west of Cookstown on Highway 89, at Rockford on Highway 6 & 10, were undertaken to alleviate drainage problems in the former and to correct an accident-prone intersection in the latter.

Building on a base of material obtained from the Niagara Escarpment, a Drainage and Paving Contract was begun from Duntroon to Stayner on Highways 24 and 91. A long, steep grade east of Duntroon received special attention from our Design Branch to minimize maintenance costs for scour and erosion problems by properly treating drainage facilities. Of interest, was the performance of the sand pad which was placed late in 1966 and required minimum repairs this spring.

A late call contract was awarded for the Clearing, Grubbing and Fencing of Highways 26 & 27, from Barrie to Midhurst. This allowed utility relocations to be completed prior to the award of a Grading, Drainage, Granular Base & Paving Contract. This latter contract will include one of the early deep-strength asphalt treatments. We will await performance results of this material with interest. Long sections of "Singing Median" will also be incorporated in this project. A new structure will be built over the Willow Creek north of the intersection of Highways 26 & 27. The highway will be widened from two lanes to four.

The intersection of Highways 9 and 27 northerly on a new diversion joining Highway 27 north of Schomberg is the scene of a major grading, drainage, granular base and paving contract. Included is a structure over a branch of the Schomberg River. A

large muskeg excavation at the structure site is presently being carried out. Suitable backfill to replace the muskeg is available in one of the large cuts on the contract. Several culverts will also be extended in this project as well as installation of new units.

Owen Sound District also had three Resurfacing Contracts—Highway 70, a heavily travelled, newly-assumed Highway on the route from Owen Sound to Sauble Beach was resurfaced from Owen Sound to the connecting County Road at Hepworth. Highway 89 from Cookstown to Alliston was also resurfaced.

Several bridge decks on Highway 400 are being stripped, waterproofed and repaired is required, in conjunction with a 16.5 mile resurfacing contract, primarily devoted to the northbound lanes. Traffic control is the major problem on this contract. We restricted the Contractor to one paver to prevent traffic passage between pavers thereby damaging the centre joint. This contract also requires the Contractor to carry out his surface course in one operation prior to paving interchange legs and township road entrances. Adequate traffic cones, barricades, flashing lights and flagmen have given us excellent traffic control on these contracts.

Ice jams and flooding have occurred regularly in the spring between Stayner and Collingwood. To correct this situation, a large box culvert and highway diversion are under construction at Brock's Beach.

The C.P.R. Overhead, a carryover job near Coldwater, requires minor work to complete. This structure eliminates a potentially dangerous level crossing on a steep grade.

We consider 1966-67 to be a very successful year from a Construction point of view.

#### MAINTENANCE

During the past year a new four bay steel heated patrol building was erected at Meaford. To combat contamination, a Dome type self-supporting wooden building



Hwy. 91—Reconstruction west of Stayner. Photo 8471—(Owen Sound)





Hwy. 11—Willow Creek Bridge construction  $\frac{1}{2}$  mile south of Hwy. 93. Photo 8472-A—(Owen Sound)

was constructed at the Flesherton Patrol Yard for storage of 3000 cu. yds. of salt-treated sand. A sand pile site was placed south of Chatsworth on Highway 10. A new equipment stockroom and offices building was constructed in the Owen Sound District Headquarters.

Gasoline and diesel fuel dispensing pumps were attached to 1000 gal. underground storage tanks at Durham, Coldwater and Foresthome Patrol Yards.

An electrical section was added and arrangements made for a 3 ton truck with hydraulic derrick attachment to service expanded highway illumination throughout the District. A new zone striper was acquired with twin tanks and dual spray mechanism. Also the District obtained a new hydra-seeder and straw mulcher. By use of a 100 foot plastic tube extension excessively high slopes were seeded and mulched successfully. Two extra 5 ton single axle plow trucks were added to District complement for better coverage. In addition two six ton single axle plow units performed efficiently as replacements. An experimental trip wing snow unit, harnessed to rear of vehicle, was tried out under various conditions and did not perform satisfactorily. A new turret mounted wing type snow blower was tested and found to remove snow windrows left by high winging. Two ton stake hoist patrol trucks continue to prove their value.

Day labour crews widened rock cuts on Highway 501 for safety of travelling public and to facilitate snow plowing. Gabions were placed upstream at Saugeen Bridge in Southampton to prevent erosion of embankment. Spray patching of paved roads continues as a patrol activity. However, this work is now confined to half inch wide cracks. Spraying of hair line cracking has been large eliminated. To aid drainage

and improve grass growth on shoulder slopes, patrol crews are now using graders and rakes to recover shoulder gravel and level off gravel berms.

A Maintenance Quality Standard on grass mowing was issued and implemented as far as possible.

A heavy snowfall was encountered in snow storms, and heavily drifted areas were promptly reported by radio and extra equipment dispatched. Continued co-operation with the Ontario Provincial Police is proving very useful in co-ordinating traffic flow and snow plowing arrangements.

### Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	GRADE SEP.		TYPE OF SIGNAL
			SUBWAY BUILT	O'PASS BUILT	
70	C.N.R.	Mileage 62.33, Owen Sound subdivision, Village of Shallow Lake, Township of Keppel, County of Grey.....	n/a	n/a	2 flashing light signals and one bell at crossing

### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES		TONS PLACED
				COMPL.	THIS FISCAL YEAR MILEAGE	
4	Durham easterly.....	1.00	1966	n/a	1.00	760
6	Mount Forest-Varney.....	n/a	1966	n/a	n/a	160
and 70	Hepworth to Wiarton.....	7.79	1966	n/a	7.79	24,204.67
10	Dundalk to Chatsworth.....	n/a	1966	n/a	n/a	523.25
11	Willow Creek Bridge.....	0.29	1966	n/a	0.29	978.95
and 12	Interchange Hwys. 11 and 12.....	1.67	1966	n/a	1.67	3,502.75
12	Parking Lot and access road for Ste. Marie Among the Hurons.....	n/a	1966	n/a	n/a	718.83
12	C.P.R. overhead 1.5 mi. south of 400.....	0.78	1966	n/a	0.78	2,962.00
and 70	Owen Sound westerly to junction Hwy. 21 and 70 and to Hepworth on Hwy. 70.....	7.00	1966	n/a	7.00	11,802.00
26	Nottawasaga River Bridge at Edenvale.....	n/a	1966	n/a	n/a	344.25
27	Wye River Bridge in Wyebridge.....	0.17	1965	n/a	0.17	398.48
89	0.3 mi. west of Cookstown to Alliston.....	7.26	1966	n/a	7.26	10,415.75
90	Angus easterly.....	6.03	1965	n/a	6.03	27,416.01
91	Stayner to Duntroon.....	5.12	1966	n/a	5.12	2,833.00
400	Service centre 4 mi. south of Barrie.....	n/a	1966	n/a	n/a	2,177.81
TOTALS		37.11			37.11	89,197.75

### Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
6	1 mi. north of Wiarton to 14 mi. north.....	13	39,887	1,038.80



### Bituminous Surface Treatment

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS CHIPS USED
4	From 2.3 mi. east of junction of Hwys. 4 and 6, to 0.2 mi. east of C.P.R. underpass.....	9.4	29,568	1,413.34
501	From junction of Hwy. 103 to Honey Harbour.....	9.5	29,768	1,281.62
	TOTALS.....	18.9	59,336	2,694.96

### Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
11	Willow Creek Bridge, 0.6 mi. south of junction Hwys. 93 and 11.....	1966	1966	1966	Reinforced concrete
12	Coldwater C.P.R. overhead, 1.5 mi. south of Hwy. 400.....	1966	1966	1966	Reinforced concrete
26	Beaver River Bridge, Thornbury.....	1966	—	—	Reinforced concrete structural steel
91	Lamont Creek Bridge, 1 mi. west of Stayner	1965	1966	1966	Reinforced concrete
400	St. Vincent Street overpass.....	1966	—	—	Reinforced concrete with post stressed deck

### Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
4	Durham to Flesherton.....	9.4	1,413.00
6			
and 10	Rockford Intersection.....	0.36	3,801.00
6			
and 70	Village of Hepworth northerly to south limits of Wiarton.....	7.79	33,575.50
11	D.H.O. yard, Forest Home.....	—	7,000.00
11	Willow Creek Bridge.....	0.29	2,392.39
11			
and 12	Intersection Hwys. 11 and 12.....	1.67	15,339.36
12	D.H.O. yard, Coldwater.....	—	6,000.00
12	Parking lot access road, Ste. Marie Among the Hurons.....	0.10	13,053.64
12	C.P.R. overhead, 1.5 mi. south of Hwy. 400.....	0.78	12,660.00
26	Beaver River Bridge, Thornbury.....	0.10	517.00
26	Intersection Hwy. 26 and County Road 27 at Brock's Beach.....	0.53	6,000.00
27	D.H.O. yard, Midhurst.....	—	4,000.00
88	D.H.O. yard, Bradford.....	—	5,000.00
89	Culvert replacement and stream diversion, 0.5 mi. west of Hwy. 27.....	0.36	2,323.00
91	Stayner to Duntroon.....	4.81	63,304.73
92	Elmvale to Wasaga Beach.....	8.9	8,000.00
400	Service centre, 4 mi. south of Barrie.....	0.81	31,470.54
400	D.H.O. yard, Barrie.....	—	4,000.00
400	St. Vincent Street structure.....	0.40	1,884.00
501	Junction Hwy. 103 to Honey Harbour.....	9.5	1,280.00
	TOTALS.....	45.80	223,014.16

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
4	2 mi. south of Teeswater to Flesherton.....	47.80	3,084
6	Mount Forest to Tobermory.....	107.4	4,984.5
9	Clifford to the east junction of 4 and 9 and Kincardine to the west junction of 4 and 9.....	36.1	417
10	Dundalk to junction 6 and 10 Chatsworth.....	32.7	1,024.5
11	Bradford to Barrie; Crownhill to Severn Bridge.....	88.2	2,584.5
11B	Junction Hwy. 11 (south) to junction Hwy. 11 (north) (Orillia).....	5.6	642
12	Orillia to Coldwater and Waubaushene to Midland.....	35.5	1,425
12B	Atherley to north junction Hwys. 11 and 12.....	5.1	—
21	Amberley to junction Hwys. 6 and 21.....	52.9	1,680
24	5.8 mi. south of Singhampton to Collingwood.....	18.3	2,311.5
26	Barrie to Owen Sound.....	74.7	2,290.5
27	Schomberg to Penetanguishene.....	55.8	1,704
69	Junction Hwy. 11 (Washago) to south side of Severn River Bridge.....	.5	90
70	Junction Hwy. 6 and 21 to Hepworth.....	9.2	—
88	Bondhead to Bradford.....	5.8	105
89	Junction Hwy. 400 to Rosemount.....	17.6	261
90	Barrie to Angus.....	13	22.5
91	Stayner to Duntroon.....	5.1	142.5
92	Elmvale to Wasaga Beach.....	8.9	2,604
93	Crownhill to Waverley.....	17.5	15
103	Coldwater to junction Hwy. 501.....	5.4	—
120	Junction Hwy. 400 to junction Hwys. 11 and 93.....	1.4	—
400	Junction Hwy. 88 to Coldwater.....	56.9	1,567.5
501	Port Severn to Honey Harbour.....	9.2	862.5
TOTALS.....		710.6	27,817.5

## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	
				COMPL. PREV. YRS.	COMPL. THIS YEAR
4	Durham Easterly.....	2.29	1966	n/a	2.29
6					
and 10	Rockford Intersection.....	0.36	1966	n/a	0.30
6					
and 70	Village of Hepworth and northerly to south limits of Wiarton.....	7.79	1966	n/a	7.79
11					
and 12	Intersection of Hwys. 11 and 12.....	1.67	1965	n/a	1.67
12	Parking Lot and access road for Sainte Marie Among the Hurons.....	0.32	1965	n/a	0.32
12	C.P.R. overhead 1.5 mi. south of Hwy. 400.....	0.78	1965	n/a	0.78
26	Beaver River Bridge, Thornbury.....	0.10	1966	n/a	—
26	Intersection of Hwy. 26 and County Road 27 at Brock's Beach.....	0.53	1966	n/a	—
27	Wye River Bridge in Wyebridge.....	0.17	1965	n/a	0.17
27	Midhurst patrol yard.....	n/a	1965	n/a	n/a
89	Culvert replacement and stream diversion, 0.5 mi. west of junction of Hwys. 89 and 27, Cookstown.....	0.36	1966	n/a	0.36
91	Stayner to Duntroon.....	4.81	1965	n/a	4.81
400	Service centre, 4 mi. south of Barrie.....	0.80	1965	n/a	0.80
400	Saint Vincent Street structure.....	—	1966	—	—
TOTALS.....		19.98			19.29

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
4	Durham easterly.....	2.29	1966	—	1.00	63,371
6						
and 10	Rockford intersection.....	0.36	1966	—	0.30	18,365
6						
and 70	Village of Hepworth and northerly to south limits of Wiarton.....	7.79	1966	—	7.79	59,313.95
11	Willow Creek Bridge.....	0.29	1966	—	0.29	6,765.96
11						
and 12	Intersection of Hwys. 11 and 12.....	1.67	1965	—	1.67	42,175.89
12	C.P.R. overhead, 1.5 mi. south of Hwy. 400.....	0.78	1965	—	0.78	37,830.00
12	Parking lot and access road for Sainte Marie Shrine Among the Hurons..	0.32	1965	n/a	n/a	44,445.70
26	Beaver River Bridge, Thornbury.....	0.10	1966	—	—	—
26	Intersection of Hwy. 26 and County Road 27 at Brock's Beach.....	0.53	1966	—	—	—
27						
and 9	Intersection of Hwys. 27 and 9 at Schomberg.....	3.69	1966	—	—	—
27	Midhurst patrol yard.....	n/a	1965	n/a	n/a	2,626.53
89	Culvert replacement and stream di- version, 0.5 mi. west of junction of Hwys. 89 and 27, Cookstown.....	0.36	1966	—	0.29	10,163.00
90	Angus easterly.....	6.03	1965	—	6.03	251,962.96
91	Stayner to Duntroon.....	4.81	1965	—	4.81	233,458.84
400	Service centre, 4 mi. from Barrie.....	0.80	1965	—	0.80	13,805.18
400	Saint Vincent Street structure .....	0.40	1966	—	—	8,297.00
TOTALS .....		30.22			23.76	792,581.01

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
—	Flesherton patrol yard—80 ft. diameter .....	Sand dome	Salted sand storage	1966	1966
—	Owen Sound headquarters—40 ft. by 40 ft., two floors .....	Conc. block and brick face	Equipment stock room and offices	1966	1967
26	Meaford patrol yard—88 ft. by 40 ft. ....	Pre-fabricated 4 bay metal garage	Patrol vehicle storage and office	1966	1967

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....(gals.)	11	224	—
Calcium dust layer on gravel roads .....	—	105	18
Off-road parks maintained .....	16	—	—
Roads snowploughed and kept open, King's highways.....	—	—	708
Roads snowploughed and kept open, secondary highways.....	—	—	9
Roadside picnic places maintained.....	51	—	—
Routine maintenance, King's highways.....	—	—	708
Routine maintenance, secondary highways.....	—	—	9
Salt for de-icing roads (raw) .....	—	16,733	—
Salt in sand, stockpiled.....	—	3,275	—
Sand for winter maintenance .....	—	102,214	—
Seeding by department's forces.....(acres) S.Y.	488,840	101	—
Shrubs received and planted this year.....	1,725	—	—
Signs erected or replaced.....	12,421	—	—
Snow fence erected, dismantled, stored.....	—	—	196
Snow hedges planted this year .....	—	—	1
Weed control.....	—	1,120	856
Zone painting on King's highways.....(gals.)	—	10,513	875
Zone painting on secondary highways.....(gals.)	—	100	8.4



**DISTRICT No. 6 — TORONTO**

**F. G. Allen, P.Eng., District Engineer**

**CONSTRUCTION**

Reconstruction of the Toronto By-Pass portion of the Macdonald-Cartier Freeway proceeded on schedule and it is expected that the sections of the By-Pass between Yonge Street and Warden Avenue and between Wendall Avenue and Kipling Avenue will be completed by November of 1967. A contract for the reconstruction of the By-Pass from Kipling Avenue to the West end of the Dixon Road-Martingrove Road Interchange was awarded and work is proceeding at a rapid pace.

Contracts were awarded and work is proceeding rapidly, on Highway 10 from Burnhamthorpe Road to Highway 401, on Highway 122 from Highway 2 to Q.E.W. Highway, and on Highway 401 from Toronto to Oshawa for Interchange improvements.

The initial contract for the construction of Highway 9 from Highway 400 to Highway 27 was awarded. This contract was for the relocation of the Holland Marsh drainage canal which will provide for the construction of the highway in the location of the old canal.

The new section of Highway 48 between Port Bolster and Highway 12 was opened to traffic and with the exception of the top course of asphalt, which will be placed early in the Summer of 1967, the work is completed.

District 6 entered into a complete new field of transportation, in the fiscal year 1966-67, when it became involved in the construction of the parking lots and stations

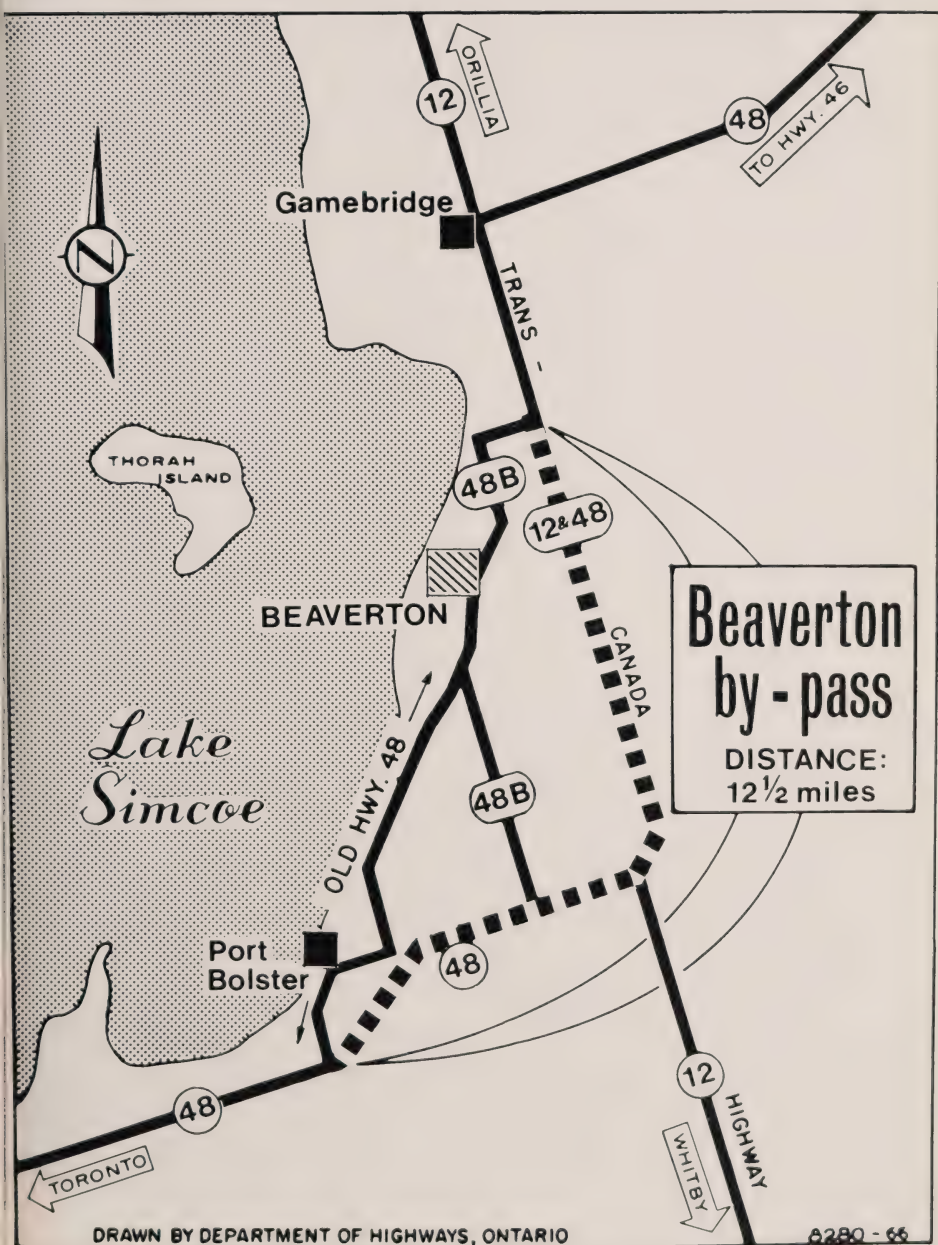


Hwy. 401—Don Valley Parkway interchange. Photo 8868-B—(Toronto)

for the new Government of Ontario Commuter Rail Project between Pickering and Hamilton. The new Commuter System warranted the construction of ten parking lots and 13 stations including the electrical and mechanical work involved.

A total construction expenditure of over \$36,000,000 indicates the large volume of work completed in District No. 6 during the fiscal year 1966-67.

Three preliminary contracts were awarded on the Q.E.W. highway which sets the





stage for the major reconstruction at the Q.E.W. highway and Highway 27 Interchange. This Interchange will eventually form part of the Highway 27, Highway 401 Collector-Distributor Freeway to By-pass Toronto.

A contract for the construction of the Highway 400 extension South of Highway 401 to Jane Street was completed and opened to traffic.

The fiscal year 1966-67 saw the completion of the widening of the Q.E.W. Highway to six lanes from Mississauga Road to the Ninth Line, the completion of the widening to four lanes of Highway 10 from Brampton to Victoria and the opening of a section of Highway 9 from Highway 11 to Highway 400, which was completely reconstructed after it being assumed from the Township.

Work was also started on the widening of Highway 2 from Toronto to Oshawa with the awarding of contracts from the Metro limits to Dunbarton and from Whitby to Oshawa. The contract from Whitby to Oshawa was an early Spring award and consequently the construction work is well on its way to completion.

#### MAINTENANCE

795 miles of highway were maintained during the year.

Pavement patching by contract continued with 17,010 tons of hot mix asphalt being used on some 360 miles of highway.

Weed control spraying was carried out on 776 miles of right-of-way and tree planting was continued with a total of some 2,980 young trees and shrubs being planted.

The Department called a total of 3 grass mowing contracts to test the possibility of carrying out a major portion of such work by contract and found this method quite satisfactory on expressways. A considerable portion of mowing was also carried out on an equipment rental basis, and the balance of the work was done by Department forces.

The Sign Shop and Sign Erection Crews were kept busy as some 21,479 signs were erected. A large portion of these being required due to expansion of the Macdonald Cartier Freeway and the Queen Elizabeth Way in the immediate Toronto vicinity.



Hwy. 401—Concrete paving east of Don Mills Road. Photo 8241-B—(Toronto)

During the winter, the highway maintenance program required 84,680 tons of sand and 41,780 tons of salt to be spread on 795 miles of highway.

The Department is conducting highway maintenance in new methods, as changes from the older methods are required to cope with maintenance needs of the modern freeways, particularly around Toronto. This will result in work being carried out in new patterns, which we anticipate will permit expressway maintenance to be provided with speed and efficiency.

The Emergency Traffic Patrol has been giving exceptionally fine service in keeping traffic moving on the freeways, by timely assistance to motorists in need.

### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES	YEAR	MILES	THIS FISCAL YEAR	
		COMPL.	BEGUN	COMPL. PREV. YRS.	MILEAGE COMPL.	TONS PLACED
01	Hwy. 400 interchange from Jane Street to west Wendell Avenue.....	1.00	1963	1.00	—	50
01	Canadian National Railway overhead bridge east of Keele Street to Jane Street.....	1.90	1964	1.90	—	5
E.W.	1.6 mi. west of Hwy. 10 westerly 2.2 mi. Macdonald-Cartier Freeway and Weston Road interchange from Wendell Avenue to 0.30 mi. west of Humber River, 0.89 mi. (Macdonald-Cartier Freeway), 0.57 mi. (Weston Road).....	2.30	1965	0.30	2.00	46,106
01	Macdonald-Cartier Freeway from existing Leslie Street easterly to immediately west of Victoria Park Avenue, including Don Valley Parkway interchange.....	1.46	1965	0.50	0.50	5,910
01	Macdonald-Cartier Freeway from west of Hoggs Hollow to east limit of Bayview Avenue interchange.....	1.73	1965	0.25	1.41	18,272
E.W.	3.8 mi. west of Hwy. 10 westerly 3.3 mi. Macdonald-Cartier Freeway from east end of Bayview Avenue interchange to immediately east of Don River, including Leslie Street interchange.....	1.85	1965	0.30	0.78	9,828
01	Jane Street interchange.....	3.30	1965	—	3.30	44,731
00	Service centre (400-1) 2 mi. north of Maple Sideroad west of Hwy. 400.....	1.97	1965	0.36	0.60	4,273
00	Rouge River bridge 0.8 mi. east of Toronto east limits.....	0.94	1965	—	0.94	5,277
2	Macdonald-Cartier Freeway and Islington Avenue interchange from 0.30 mi. west of Humber River to Kipling Avenue.....	0.85	1965	—	0.85	2,308
01	D.H.O. yard, Downsview.....	0.59	1965	—	0.59	440
2	From Hwy. 12 in Whitby easterly to Oshawa west limits.....	1.98	1965	0.20	0.67	7,179
01	Macdonald-Cartier Freeway from west of Victoria Park Avenue interchange to east of Warden Avenue interchange	—	1965	—	—	1,229
E.W.	Kipling Avenue to Roydon Drive plus temporary structure at Wickman Road and Canadian Pacific Railway overpass.....	2.36	1966	—	1.88	18,634
		1.30	1966	—	0.65	15,878
		0.81	1966	—	0.81	5,289
TOTALS.....		24.34		4.81	14.98	185,409



**Bituminous Mulch and Cold Mix**

HWY. No.	LOCATION	THIS FISCAL YEAR
		TONS PLACED
Var.	Various isolated patching throughout district—cold mix.....	676.45
Var.	Various isolated patching throughout district—hot mix patching.....	1,022.30
TOTAL.....		1,698.75

**Bituminous Surface Treatment**

HWY. No.	LOCATION	THIS FISCAL YEAR TONS OF DIX SEAL
10	Junction Hwys. 5 and 10, Cooksville.....	110

**Bridges Built**

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
400	Black Creek bridge, North York township, Lot 7, concession IV, W.Y.S.....	1965	1966	1966	Post tensioned deck
400	Black Creek bridge, North York township, Lot 9, concession V, W.Y.S.....	1965	1966	1966	Steel beam
400	Jane Street overpass, North York township, Lot 8, 9, concession V, L-7, concession IV, W.Y.S.....	1965	1966	1966	Steel beam
401	Weston Road underpass, North York town- ship, Lot 10, concession V.....	1965	1966	1966	Steel beam
401	East to north and southbound bridge 4, North York, Lot 10, concession V, Etobi- coke, 25, B.....	1965	1966	1966	Steel beam
401	Humber River bridge 3, North York, Lot 10, concession V, Etobicoke, 25, B.....	1965	1966	1966	Steel beam
401	Humber River bridge 2, North York, Lot 10, concession V, Etobicoke, 25, B.....	1965	1966	1966	Steel beam
401	South to westbound bridge 1, North York, Lot 10, concession V, Etobicoke, 25, B.....	1965	1966	1966	Steel beam
401	Canadian Pacific Railway overhead east of Weston Road, North York, Lot 10, con- cession V.....	1965	1966	1966	Prestressed rigid frame
Q.E.W.	Mississauga Road overpass, Toronto town- ship, Lot 8, range 2.....	1965	1966	1966	—
401	Don River bridge 1, North York township, Lot 14, concession II.....	1965	1966	1966	Steel beam
401	Don River bridge 2, North York township, Lot 14, concession II.....	1965	1966	1966	Steel beam
401	Don River bridge 4, North York township, Lot 14, concession II.....	1965	1966	1966	Steel beam
401	Bridge 2, North York township, Lot 13, 14, concession III.....	1965	1966	1966	Post tensioned deck
401	Bridge 4, North York township, Lot 13, concession III.....	1966	1966	1966	Rigid frame
401	Bridge 7, North York township, Lot 13, concession IV.....	1965	1966	1966	Prestressed beam
401	Bridge 10, North York township, Lot 13, concession IV.....	1967	—	—	Prestressed beam

401	Yonge Street bridge 1, North York, Lot 13, concession I, W.Y.S.	1965	1966	Nth. Exten.	
401	Yonge Street bridge 2, North York, Lot 13, concession I, E.Y.S.	1966	—	1966	Steel beam
401	Hoggs Hollow north, bridge on collector road, North York, Lot 13, concession I, W.Y.S.	1964	1966	1966	Steel beam
401	Hoggs Hollow south, bridge on collector road, North York, Lot 13, concession I, W.Y.S.	1964	1966	1966	Steel beam
2	Rouge River bridge, south structure, Pickering, Lot 32, 33, 34, Ontario	1965	1966	1966	Post tensioned
401	Bridge 3, Etobicoke, Lot 25, concession "A" FTH	1965	—	—	Post tensioned prestressed
401	Bridge 5, Etobicoke, Lot 25, concession "B" FTH	1965	1966	1966	Post tensioned prestressed

Concrete Base Pavement, Asphalt Top

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES THIS FISCAL YEAR			PAVE. WIDTH
				COMPL. PREV. YRS.	MILES COMPL.	TONS PLACED	
401	Macdonald - Cartier Freeway and Weston Road interchange, from Wendell Avenue to 0.30 mi. west of Humber River, 0.89 mi. (Macdonald-Cartier Freeway), 0.57 mi. (Weston Road)	1.46	1965	—	0.53	3,912	Various
401	Macdonald - Cartier Freeway from existing Leslie Street easterly to immediately west of Victoria Park Avenue including Don Valley Parkway interchange	1.73	1965	—	1.16	2,186	Various
401	Macdonald - Cartier Freeway from west of Hogg's Hollow to east limit of Bayview Avenue interchange	1.85	1965	—	0.48	728	Various
401	Macdonald - Cartier Freeway from east end of Bayview Avenue interchange to immediately east of Don River including Leslie Street interchange	1.97	1965	—	0.24	192	Various
400	Jane Street interchange	0.94	1965	—	0.94	1,275	Various
401	Macdonald - Cartier Freeway and Islington Avenue interchange from 0.3 mi. west of Humber River to Kipling Avenue	1.98	1965	—	0.47	2,234	Various
401	Macdonald - Cartier Freeway from west of Victoria Park Avenue interchange to east of Warden Avenue interchange	1.30	1966	—	0.65	4,625	Various
	TOTALS	11.23		—	4.47	15,152	

## Concrete Pavement

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	THIS FISCAL YEAR		PAVE. WIDTH
				COMPL. PREV. YRS.	MILES COMPL.	SQ. YDS. PLACED	
401	Macdonald - Cartier Freeway and Weston Road interchange from Wendell Avenue to 0.3 mi. west of Humber River, 0.89 mi. (Macdonald-Cartier Freeway), 0.57 mi. (Weston Road).....	1.46	1965	0.07	1.19	46,190	Various
401	Macdonald - Cartier Freeway from existing Leslie Street easterly to immediately west of Victoria Park Avenue including Don Valley Parkway interchange.....	1.73	1965	—	1.30	200,699	Various
401	Macdonald - Cartier Freeway from west of Hogg's Hollow to east limits of Bayview Avenue interchange.....	1.85	1965	—	0.70	73,060	Various
401	Macdonald - Cartier Freeway from east end of Bayview Avenue interchange to immediately east of Don River including Leslie Street interchange.....	1.97	1965	0.04	0.92	44,832	Various
400	Jane Street interchange.....	0.94	1965	—	0.94	34,253	Various
401	Macdonald - Cartier Freeway and Islington Avenue interchange from 0.3 mi. west of Humber River to Kipling Avenue.....	1.98	1965	—	0.79	54,052	Various
401	Macdonald - Cartier Freeway from west of Victoria Park Avenue interchange to east of Warden Avenue interchange.....	1.30	1966	—	0.65	52,343	Various
	TOTALS.....	11.23		0.11	6.49	505,429	

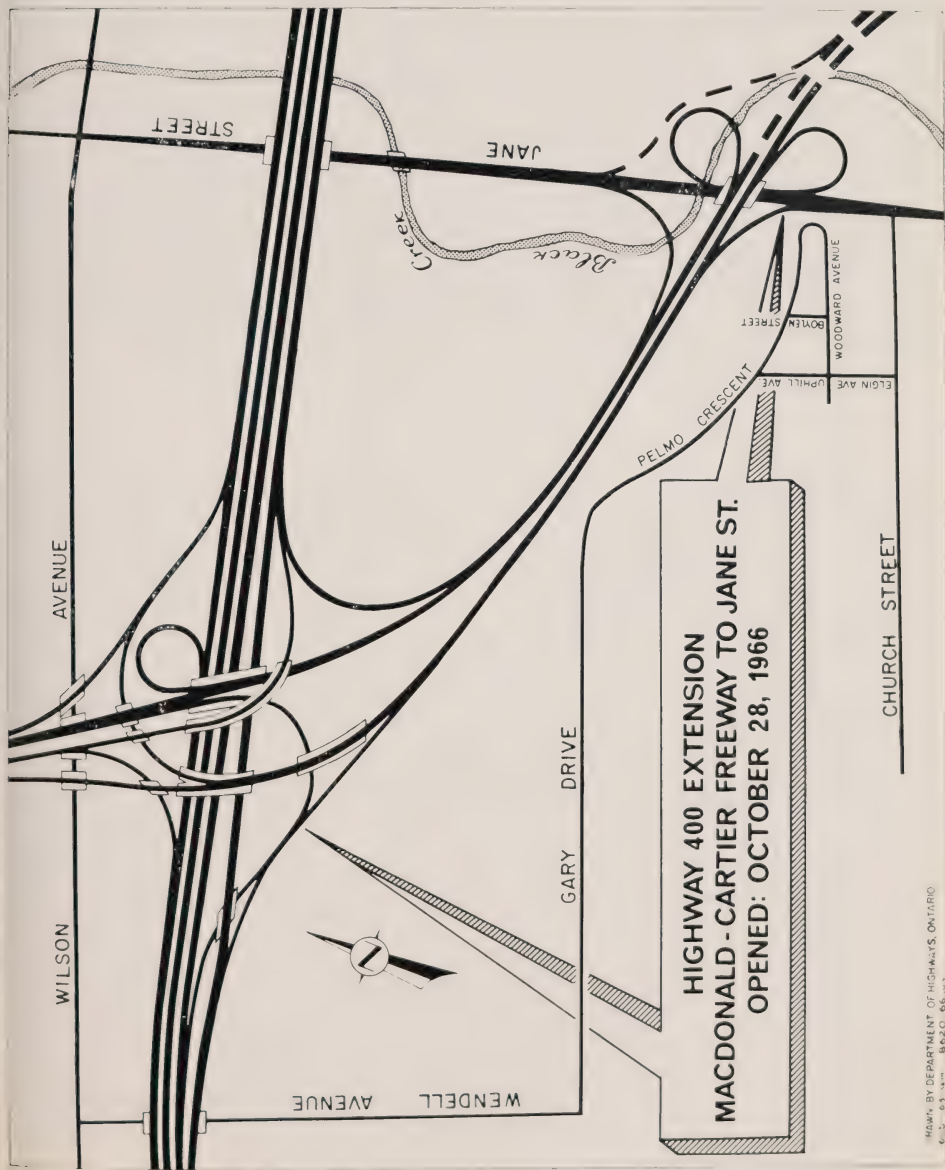
## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
401	Weston Road interchange.....	0.87	171,580
401	Leslie Street easterly to west of Victoria Park Avenue.....	1.25	418,472
401	West of Hogg's Hollow to east limit of Bayview Avenue interchange..	0.72	186,558
Q.E.W.	3.8 mi. west of Hwy. 10 westerly 3.3 mi.....	0.13	24,045
401	From east end of Bayview interchange to east of Don River including Leslie Street interchange.....	0.94	101,828
400	Hwy. 400 and Jane Street interchange 0.94 mi.....	0.82	80,859
400	Service centre (400-1) 2.0 mi. north of Maple Sideroad.....	0.60	53,499
2	Rouge River bridge, 0.8 mi. east of Toronto east limits.....	0.34	4,540
401	Islington interchange 0.30 mi. west of Humber to Kipling Avenue interchange.....	0.81	184,787
2	Hwy. 12 Whitby easterly to Oshawa west limits.....	2.36	168,708
401	West of Victoria Park Avenue interchange to east of Warden Avenue interchange.....	0.87	236,213
Q.E.W.	Kipling Avenue to Roydon Drive plus temporary structure at Wickman Road and Canadian Pacific Railway overpass.....	0.81	55,208

10	Burnhamthorpe Road northerly to Hwy. 401.....	0.18	13,247
122	Hwy. 2 northerly to Queen Elizabeth Way.....	0.07	19,700
400	Hwy. 400 extension at Queen's Drive.....	0.80	872
	Commuter stations, Guildwood, Eglinton, Scarborough.....		40,991
TOTALS.....		11.57	1,761,107

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	TONS PLACED
Var.	Various locations throughout district.....	23,353







Hwy. 2—Rouge River Bridge construction. Photo 8821—(Toronto)



Hwy. 12—Beaverton By-pass. Photo 8550-A—(Toronto)

Grading and Culverts

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	MILES
				PREV. YRS. COMPL.	THIS YEAR COMPL.
Q.E.W.	1.6 mi. west of Hwy. 10 westerly 2.2 mi.....	2.30	1965	0.30	2.00
401	Macdonald-Cartier Freeway and Weston Road interchange from Wendell Avenue to 0.30 mi. west of Humber River, 0.89 mi. (Macdonald-Cartier Freeway), 0.57 mi. (Weston Road).....	1.46	1965	0.50	0.96
401	Macdonald-Cartier Freeway from existing Leslie Street easterly to immediately west of Victoria Park Avenue including Don Valley Parkway interchange.....	1.73	1965	0.97	0.76
401	Macdonald-Cartier Freeway from west of Hogg's Hollow to east limit of Bayview Avenue interchange.....	1.85	1965	0.28	1.10
Q.E.W.	3.8 mi. west of Hwy. 10 westerly 3.3 mi.....	3.30	1965	1.32	1.98
401	Macdonald-Cartier Freeway from east end of Bayview Avenue interchange to immediately east of Don River, including Leslie Street interchange.....	1.97	1965	0.83	1.14
400	Jane Street interchange.....	0.94	1965	0.70	0.24
400	Service centre (400-1) 2 mi. north of Maple Side-road, west side of Hwy. 400.....	0.85	1965	0.60	0.25
2	Rouge River bridge 0.8 mi. east of Toronto east limits.....	0.59	1965	0.43	0.16
401	Macdonald-Cartier Freeway and Islington Avenue interchange from 0.30 mi. west of Humber River to Kipling Avenue.....	1.98	1965	0.06	1.92
2	From Hwy. 12 in Whitby easterly to Oshawa west limits.....	2.36	1966	—	2.36
401	Macdonald-Cartier Freeway from west of Victoria Park Avenue interchange to east of Warden Avenue interchange.....	1.30	1966	—	—
Q.E.W.	Kipling Avenue to Roydon Drive plus temporary structure at Wickman Road and Canadian Pacific Railway overpass.....	0.81	1966	—	—
10	Burnhamthorpe Road northerly to Hwy. 401.....	3.00	1966	—	1.77
122	Hwy. 2 northerly to Queen Elizabeth Way.....	1.19	1966	—	—
400	Hwy. 400 extension at Queens Drive.....	0.80	1966	—	0.80
Q.E.W.	From Evans Avenue along Oxford Street to Mimico Creek.....	1.25	1966	—	—
TOTALS.....		27.68		5.99	15.44

Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	THIS FISCAL YEAR	
				PREV. YRS. COMPL.	MILES COMPL.	TONS PLACED
401	Weston Road interchange.....	1.46	1965	0.31	0.87	171,580
401	Leslie Street easterly to west of Victoria Park Avenue.....	1.73	1965	0.24	1.25	418,472
401	West of Hogg's Hollow to east limit of Bayview Avenue interchange.....	1.85	1965	0.37	0.72	186,558
Q.E.W.	3.8 mi. west of Hwy. 10 westerly 3.3 mi.....	3.30	1965	3.14	0.13	24,045
401	From east end of Bayview interchange to east of Don River including Leslie Street interchange.....	1.97	1965	0.35	0.94	101,828

400	Hwy. 400 and Jane Street interchange 0.94 mi.....	0.94	1965	—	0.82	80,859
400	Service centre (400-1) 2.0 mi. north of Maple Sideroad.....	0.85	1965	0.26	0.60	53,499
2	Rouge River bridge 0.8 mi. east of Toronto east limits.....	0.59	1965	—	0.34	4,540
401	Islington interchange 0.30 mi. west of Humber River to Kipling Avenue interchange.....	1.98	1965	0.10	0.81	184,787
2	Hwy. 12, Whitby easterly to Oshawa west limits.....	2.36	1966	—	2.36	168,708
401	West of Victoria Park Avenue interchange to east of Warden Avenue interchange.....	1.30	1966	—	0.87	236,213
Q.E.W.	Kipling Avenue to Roydon Drive plus temporary structure at Wickman Road and Canadian Pacific Railway overpass.....	0.81	1966	—	0.81	55,208
10	Burnhamthorpe Road northerly to Queen Elizabeth Way.....	3.00	1966	—	0.18	13,247
122	Hwy. 2 northerly to Queen Elizabeth Way.....	1.19	1966	—	0.07	19,700
400	Hwy. 400 extension to Queen's Drive.....	0.80	1966	—	0.80	872
	Commuter stations, Guildwood, Eglinton, Scarborough.....	—	1966	—	—	40,991
	TOTALS.....	24.13		4.77	11.57	1,761,107

### New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
401, 10	Hwys. 401 and 10 patrol yard.....	Salt shed	Salt storage	1966	1966
7	Concord patrol yard.....	Salt shed	Salt storage	1966	1966
12	Manchester patrol yard.....	Salt shed	Salt storage	1966	1966
		Temporary patrol office	Patrol crew headquarters	1966	1966

### Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	3	—	—
Roads snowploughed and kept open, King's highways.....	—	—	795
Roadside picnic places maintained.....	4	—	—
Routine maintenance, King's highways.....	—	—	795
Salt for de-icing roads (raw).....	—	41,780	—
Salt in sand, stockpiled.....	—	4,000	—
Sand for winter maintenance .....	—	84,680	—
Scale houses maintained.....	6	—	—
Seeding by department's forces..... (acres)	94	—	—
Shrubs received and planted this year.....	2,982	—	—
Signs erected or replaced.....	21,479	—	—
Snow fence erected, dismantled, stored.....	—	—	82
Traffic lights installed this year .....	7	—	—
Weed control.....	—	—	776
Zone painting on King's highways..... (gals.)	21,961	—	—



**DISTRICT No. 7 — PORT HOPE****D. P. Collins, P.Eng., District Engineer****CONSTRUCTION**

This fiscal year 1966-67 brought the completion of six carry over contracts and the completion of two new 1966 contracts. Work also started on 10 new contracts.

*Completed work on carry over:*

On Highway 46 grading, drainage and granular base for 9.4 easterly from Highway 505.

On Highway 49 grading, drainage and culverts for 3.6 miles northerly from Roblin Mills.

On Highway 48 grading, drainage and culverts for 4.9 miles easterly from Port Bolster.

On Highway 401 grading, drainage and culverts, structure and paving of interchange at Bennett Road.

On Highway 503 grading, drainage and culverts and paving of approaches to new lift locks over Trent Canal north of Kirkfield.

On Highway 12 hot mix paving for 7 miles completing the work on the Beaverton by-pass.

*New work completed in 1966:*

On Highway 33 hot mix asphalt resurfacing 7.5 miles from Wellington to Hillier.

On Highway 46 seeding and mulching for 9.4 miles easterly from Highway 505.

*New work started and not completed in 1966:*

On Highway 2 structure and approaches for 1.0 mile over Trenton River in town of Trenton.

On Highway 115 & 28 two structures and interchange started at this location south of Peterboro.

On Highway 7 clearing and grubbing commenced for 7.5 miles east of Peterboro city limits.

On Highway 49 granular bases and concrete paving for 3.6 miles northerly from Roblin Mills.

On Highway 2 grading, granular, hot mix paving and structure CN & CP railway crossing 2 miles east of Cobourg.

On Highway 28 grading, drainage, granular base and hot mix paving for 1.8 miles northerly from S. Monaghan.

On Highway 46 reshaping for hot mix paving for 9.4 miles easterly from Highway 505.

On Highway 28 grading, drainage, granular base, hot mix paving and 2 structures for 1.6 miles over Trent Canal & Perry Creek Burleigh Falls north.

On Highway 28 grading, drainage, granular base, hot mix paving and bridge improvement for 1.4 miles over Trent Canal at Young's Point.



On Highway 507 grading, drainage, granular base for 6.3 miles northerly from Highway 28 south of Lakefield.

A contract was awarded on Highway 401 for resurfacing for 7.0 miles commencing 2.8 miles east of Oshawa.

#### MAINTENANCE

During the past year Comfort Stations were completed at the Service Centres in the District: E-1, E-2, E-3, E-4.

New overhead fiberglass doors were installed on the District Garage, Paint Shop, Newcastle Patrol Garage and Pontypool Patrol Garage.

A Day Labour Program of bridge painting was carried out on three (3) bridges and minor repairs on various bridges throughout the District.

Four contracts for stockpiling Crushed Gravel were let; one of which included the application of 16,500 tons to the shoulders on various highways.

Hot Mix Patching was let for approximately 4,800 tons of H.L.3 applied to various highways in the District.

A Surface Treatment Contract was carried out on 29 miles of roads, including Highways 7, 45, 503.

A Prime Dust Layer Contract, which included 37 miles of road; was carried out on Highways 7A, 46, 503, 505, 507.

The District Sign Shop replaced approximately 12,500 signs throughout the District.



Hwy. 2—Construction of Trent Canal Bridge at Trenton. Photo 8545-A—(Port Hope)

The Zone Painting Crew zone painted 760 miles of highway, including an extensive program on edge markings.

The District Forestry Crew seeded approximately 21 acres and planted 3,000 seedling trees and shrubs. Weed Spraying was carried out on 522 miles of highways. During the winter an extensive program was carried out on the removal of dead and dangerous trees. A stump removal contract was let for the removal of 869 stumps on various highways in the District.

Day Labour Construction of grade and alignment was carried on for 0.7 miles on Highway 505 and 1.0 mile on Highway 503 from Uphill easterly.

Day Labour Mulch Project was completed for 2.5 miles on Highway 503, vicinity of Head Lake West.

Fifteen off-road parks were maintained by patrol crews and 78 roadside picnic sites.

#### Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES	YEAR	MILES	THIS FISCAL YEAR	
		COMPL.	BEGUN	COMPL. PREV. YRS.	MILEAGE COMPL.	TONS PLACED
2	(Various) junction 106, Bowmanville.....	Nil	1966	Nil	Nil	540.00
2	C.N.R. and C.P.R. overhead 2 mi. east of Hwy. 45.....	0.50	1966	Nil	0.16	959.00
2	Trent River Bridge, Town of Trenton....	1.00	1966	Nil	0.55	2,055.00
7	(Various) 3 mi. east of Peterborough, junction Hwy. 46.....	Nil	1966	Nil	Nil	960.00
12TC	Beaverton by-pass.....	8.23	1965	1.56	6.67	26,637.29
28	(Various) Port Hope-Peterborough.....	Nil	1966	Nil	Nil	1,687.08
28	Junction 115 and 28 including 2 struc- tures.....	0.70	1966	Nil	0.25	3,633.00
35, 115	Intersection improvement at north and south entrances to Orono.....	0.85	1965	0.75	0.10	1,557.32
35	(Various) junction 115-Rosedale.....	Nil	1966	Nil	Nil	640.00
46	(Various) junction 7-junction 505.....	Nil	1966	Nil	Nil	450.00
106	(Various) junction 28-Hwy. 2.....	Nil	1966	Nil	Nil	50.00
115	Junction 401 and 115.....	Nil	1966	Nil	Nil	50.00
121	(Various) Kinmount junction, Hwys. 121 and 649.....	Nil	1966	Nil	Nil	250.00
401	(Various) Oshawa to Mill Street, New- castle.....	Nil	1966	Nil	Nil	948.16
401	Bennett Road interchange and service road 1.6 mi. east of Bowmanville.....	1.40	1965	Nil	1.40	10,372.2
503	Kirkfield.....	Nil	1966	Nil	Nil	60.090
503	Approach to Trent Canal at Kirkfield.....	1.06	1965	0.38	0.68	2,192.53
	TOTALS.....	13.74		2.69	9.81	53,042.30

#### Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	MILES	MILES	THIS FISCAL YEAR	
		IN JOB	COMPL. PREV. YRS.	MILES COMPL.	TONS PLACED
503	From 7.5 mi. west of Norland, westerly 2.5 mi.....	2.5	2.0	2.5	4,450



Hwy. 115 and 28—Interchange construction. Photo 8547—(Port Hope)

Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS SAND USED
7A	Junction Hwy. 115 west 6.0 mi.....	6.00	14,119.42	602.12
Old 46	Junction Hwy. 505 east (various locations).....	2.00	4,706.47	201.05
503	Sebright south 8.20 mi.....	8.20	19,296.54	824.26
503	Uphill east (various locations).....	5.50	12,942.80	552.85
503	Norland east 0.5 mi.....	0.50	1,176.62	50.27
505	Uphill to Victoria Road.....	10.50	24,708.97	1,055.44
507	Junction Hwy. 28 north (various locations).....	5.00	11,766.18	502.61
TOTALS.....		37.70	88,717.00	3,788.60

Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
33	Wellington to Hillier.....	6.00	13,635.47

Bituminous Surface Treatment

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BITUMULS USED	CHIPS USED
7	Crowe River bridge (Marmora) west 7.0 mi.....	7.00	20,643.33	918.44
45	Junction County Road 22 to Fenella.....	5.90	17,399.38	774.12
503	Junction Hwys. 46 and 503 north 5.0 mi.....	5.00	14,745.24	656.03
503	Sebright to Uphill.....	9.50	28,015.95	1,246.45
503	From 1.3 mi. south Digby and Laxton Township Line southerly 1.0 mi.....	1.00	2,949.05	131.21
503	From 1.1 mi. east Oakhill Turn easterly 1.0 mi.....	1.00	2,949.05	131.21
TOTALS.....		29.40	86,702.00	3,857.46



## Bridges Built

HWY. No.	LOCATION	YEAR BEGUN	YEAR OPENED TO COMPL. TRAFFIC	TYPE OF STRUCTURE	
401	Bennett Road interchange 1.6 mi. east of Bowmanville.....	1965	1966	Yes	Reinforced concrete and prestressed beams

## Crushed Gravel and Stone on Roads by Contract

No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
2	C.N.R. and C.P.R. overhead 2 mi. east of Hwy. 45.....	0.24	5,695.00
2	Trent River bridge—Town of Trenton.....	0.77	7,373.00
7	Hill Head to Fowlers Corner (various).....	Nil	4,500.00
12TC	Beaverton by-pass.....	7.00	28,901.06
28	Junction Hwy. 401 and 28.....	Nil	3,991.12
28	South Monaghan northerly 1.8 mi.....	1.60	21,277.00
28	Junction Hwys. 115 and 28 including 2 structures.....	0.37	18,873.00
33	Wellington to Hillier.....	6.00	14,795.08
35, 115	Intersection improvement at north and south entrances to Orono.....	0.27	967.85
35	0.5 mi. south of junction Hwys. 35 and 7 Lindsay.....	Nil	2,497.77
35	Cambray Turn to junction Hwys. 35 and 35A (various).....	Nil	3,968.29
35B	Lindsay north limits, junction Hwys. 35 and 35B (various).....	Nil	600.00
36	Bobcaygeon south limits to junction Hwy. 7 Lindsay (various).....	Nil	5,000.00
46	From secondary road 505 to Hwy. 35.....	3.58	37,349.79
46	Secondary Hwy. 505 easterly—Hwy. 35 including resurfacing old Hwy. 46.....	3.20	3,919.00
48	1.0 mi. south of Port Bolster to new Hwy. 12 (Beaverton by-pass).....	4.87	49,879.95
49	Roblin Mills to Cronk's Ferry.....	2.30	4,249.00
121	Powles Corners to Fenelon Falls south limits.....	Nil	1,000.00
401	Bennett Road interchange and service road 1.6 mi. east of Bowmanville.....	1.36	32,832.68
401	Junction 401 and Grafton Road.....	Nil	5,998.84
401	Lovett Road underpass 4.9 mi. west of Hwy. 33.....	0.01	45.93
503	8 mi. west of Norland.....	Nil	8,500.00
503	Junctions of Hwys. 503 and 505 Uphill.....	Nil	7,846.22
503	Junctions of Hwys. 503 and 505 Uphill.....	Nil	10,966.43
503	Approaches to Trent Canal at Kirkfield.....	0.53	5,442.48
TOTALS.....		32.10	286,469.49

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR TOTAL MILES	TONS PLACED
46	Patrol 13. Junction Hwy. 503 and Hwy. 46 to junction Hwy. 46 and Hwy. 505.....	10.10	60.00
503	Patrol 13. Junction Hwy. 503 and Hwy. 121 to junction Hwy. 503 and Hwy. 35.....	0.50	70.50
503	Patrol 13. Junction Hwy. 503 and Hwy. 35 to junction Hwy. 503 and Hwy. 505.....	6.19	
503	Patrol 12. Junction Hwy. 503 and Hwy. 46 to junction Hwy. 503 and Hwy. 505.....	16.38	1,336.50
505	Patrol 12. Junction Hwy. 505 and Hwy. 46 to junction Hwy. 505 and Hwy. 503.....	11.00	499.50
TOTALS.....		44.17	1,966.50



## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	MILES COMPL. THIS YEAR
2	C.N.R. and C.P.R. overhead 2 mi. east of Hwy. 45.....	0.50	1966	Nil	0.25
2	Trent River bridge—Town of Trenton.....	1.00	1966	Nil	0.70
28	South Monaghan northerly 1.8 mi.....	1.80	1966	Nil	1.10
28	Junction 115 and 28 including 2 structures.....	0.70	1966	Nil	0.41
28, 36	Trent Canal at Burleigh Falls northerly 1.1 mi. including relocation of Hwy. 36.....	1.67	1966	Nil	0.18
35, 115	Intersection improvement at north and south entrances to Orono.....	0.85	1965	0.51	0.34
46	From secondary road 505 to Hwy. 35.....	9.42	1965	5.46	3.96
48	1.0 mi. south of Port Bolster to new Hwy. 12 (Beaverton by-pass).....	4.87	1965	1.95	2.92
49	Roblin Mills to Cronk's Ferry.....	3.60	1965	2.63	0.97
401	Bennett Road interchange and service road 1.6 mi. east Bowmanville.....	1.40	1965	0.08	1.32
503	Approaches to Trent Canal at Kirkfield.....	1.06	1965	0.38	0.68
	TOTALS.....	26.87		11.01	12.83

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
2	C.N.R. and C.P.R. overhead 2 mi. east of Hwy. 45.....	0.50	1966	Nil	0.31	156.11
2	Trent River bridge—Town of Trenton.....	1.00	1966	Nil	0.72	22,654.00
28	South Monaghan northerly 1.8 mi.....	1.80	1966	Nil	1.44	45,798.00
28	Junction 115 and 28 including 2 structures.....	0.70	1966	Nil	0.57	69,273.00
35, 115	Intersection improvement at north and south entrances to Orono.....	0.85	1965	0.51	0.34	88.78
46	From secondary road 505 to Hwy. 35.....	9.42	1965	6.12	3.30	56,444.17
48	1.0 mi. south of Port Bolster to new Hwy. 12 (Beaverton by-pass).....	4.87	1965	1.46	3.41	100,252.72
401	Bennett Road interchange and service road 1.6 mi. east of Bowmanville.....	1.40	1965	0.39	1.01	47,506.26
503	Approaches to Trent Canal at Kirkfield..	1.06	1965	0.04	1.02	16,529.70
	TOTALS.....	21.60		8.52	12.12	358,702.74

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
46	Lorneville Lot. 6, Con. 3, Eldon Twp....	Steel	Garage	1966	1966
401	Service centre, picnic area E-1, Esso—northside 2.5 mi. east of Newcastle Mill Street.....	Concrete block	Comfort station	1966	1966
401	Service centre, picnic area E-2, Texaco—southside 3.1 mi. east of Newtonville interchange.....	Concrete block	Comfort station	1966	1966
401	Service centre, picnic area E-3, Shell—northside 1.6 mi. west of Wooler Road	Concrete block	Comfort station	1966	1966
401	Service centre, picnic area E-4, B.A.—southside 1.7 mi. west of Wooler Road	Concrete block	Comfort station	1966	1966

## Totals of Other Work Done

ITEM	NUMBER	TONS	MILES
Bridges painted.....	—	1	—
Calcium dust layer on gravel roads .....	—	28.75	—
Off-road parks maintained .....	15	—	—
Roads snowploughed and kept open, King's highways.....	15	—	678.1
Roads snowploughed and kept open, secondary highways.....	—	—	85.8
Roadside picnic places maintained .....	78	—	—
Routine maintenance, King's highways.....	15	—	678.1
Routine maintenance, secondary highways.....	4	—	85.8
Salt for de-icing roads (raw) .....	—	17,157.20	—
Salt in sand, stockpiled .....	—	3,937.33	—
Sand for winter maintenance.....	—	86,643.10	—
Scale houses maintained.....	1	—	—
Seeding by department's forces.....(acres)	21.3	—	—
Shrubs received and planted this year.....	3,000	—	—
Signs erected or replaced.....	12,521	—	—
Snow fence erected, dismantled, stored.....	—	—	92.3
Weed control.....	—	—	522
Zone painting on King's highways.....(gals.)	15	9,149.50	678
Zone painting on secondary highways.....(gals.)	4	566.00	58

**DISTRICT No. 8 — KINGSTON**

**E. A. Cash, P.Eng., District Engineer**

**CONSTRUCTION***Macdonald-Cartier Freeway—Highway 401*

Construction of the last remaining four-lane section of this Freeway in this district, on a completely new alignment, is now well underway through rugged terrain between Gananoque and Brockville.

Of three large grading contracts between Gananoque and Lansdowne carried over from last year, two were completed and the third was advanced sufficiently to permit the commencement of the subsequent paving work. This contract also included work on Highway 137 which is a four-lane approach road to the Thousand Islands International Bridge at Ivy Lea.

A partial cloverleaf was constructed at the interchange between Highways 137 and 2 (S), largely in solid rock. Two of the legs were in rock cuts up to sixty feet in depth. At the site of the structure carrying Highway 2 (S) over Highway 137, the rock was severely seamed. In order to limit the span of the structure, the technique of pre-shearing the rock was adopted with satisfactory results. This structure and part of the Cloverleaf were opened to traffic.

Good progress was made on a new contract for granular base and paving between Gananoque and Ivy Lea. This contract incorporates the use of deep strength asphalt.

East of Ivy Lea another large grading contract was completed except for a short length at a structure. The last, and largest, grading contract was awarded in the late



Hwy. 401—Rock-cut in new section near Ivy Lea. Photo 8201-A—(Kingston)



summer. Substantial progress was made, particularly on the very large item for rock excavation.

Elsewhere on the Freeway, four contracts were awarded for grade separation structures to eliminate existing junctions at grade. One of these was opened to traffic, as was one on a contract carried over from last year.

#### *Highway 49*

Concrete paving was completed on the approaches to the structure and nearly 1/3 of the concrete in the deck was placed. Owing to the very exposed location it was found necessary to erect screens and awnings to protect the fresh concrete from sun and wind. Also during hot spells, ice was added to the mixing water as an aid in controlling the rate of set.

#### *Highway 7, Trans Canada Highway*

The grading of the Madoc By-Pass was completed and in the Fall work began on a new contract for granular base and paving.

#### *Highway 37*

Late in the year, a contract was awarded for grading and hot mix paving. Clearing was completed and a start was made on concrete culverts.

#### *Highway 133*

Concrete paving was placed and opened to traffic. The completion of this contract enabled a new structure over the railway at Ernestown station to be put into use.

### MAINTENANCE

The District Office formerly located at Barrie Street, Kingston, was moved to the new Public Works Building at Counter Street. New maintenance yards were developed at Crosby and Johnstown. Salt Sheds and Tractor Sheds were constructed to improve winter maintenance operations, and the new patrol garage and office building at Verona was completed by Special Services and was occupied by the patrol staff. The picnic sites at the two Service Centres E5 and E6 were expanded and improved by the addition of drinking fountains and toilets. Hastings County Road 1 from Foxboro Northerly to Madoc, a distance of 12 miles, was assumed by the Department and was re-numbered Highway 62.

The Glenora and Wolfe Island Ferries, which now number four (4), were successfully operated throughout the year with the Wolfe Island Ferry operating throughout the winter season by employing the services of an ice-breaking tug. The Dawson Dock, at Dawson's Point, Wolfe Island, was renovated by the installation of a new reinforced concrete docking face and a fabricated steel adjustable ramp.

The District experimented this winter with the use of more chemical for the removal of snow and ice from the pavements. The hydraulic sanders were modified to include a salt chute which would apply the chemical in a correct manner. They were also calibrated so that an accurate control of the material could be maintained.

The right-of-way of District Kings Highways was further improved by the Forestry Section with the following work: 9,052 additional trees and shrubs planted; 235 acres of right-of-way seeded and 1,415 miles sprayed for weed control. A total of 1,015 dead and dangerous trees were removed.

Further Day Labour Winter Work was carried out on Highway 509 approximately 0.5 miles South of Clarendon to correct poor alignment. Highway illumination was



installed at the following locations: Highway 401 Interchange 115, Highway 401 (2S) at Junction Highway 137, Highway 2, East Limits Napanee, and at the Junction of Highway 2 and 49.

### Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	OVERPASS
			BUILT
133	C.N.R.	1.8 mi. north of Millhaven at Ernestown.....	1965

### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
33, 133	Millhaven to Hwy. 401.....	0.90	1965	0.36	0.54	5,694
137, 401	7.4 mi. east Hwy. 2, east 1.95 mi.....	3.64	1965	0.07	3.57	13,758
401	1.2 mi. west of Gananoque easterly 4.61 mi.....	0.84	1965	0.83	0.01	128
401	Mervins Lane 0.8 mi. west Prescott.....	0.33	1965	0.30	0.03	129
401	3.45 mi. east of Gananoque easterly 3.97 mi.....	0.55	1966	Nil	0.55	953
401	0.9 mi. east of Hwy. 15.....	0.74	1966	Nil	0.74	1,164
401(S)	Interchange entrance to Rockport.....	0.66	1966	Nil	0.66	1,787
401	Cliff Road underpass and Landsdowne patrol yard.....	2.75	1966	Nil	2.75	3,923
401	Hwy. 38, westerly 7.24 mi.....	0.29	1965	Nil	0.29	744
401	5.5 mi. west of Hwy. 14.....	0.06	1966	Nil	0.06	287
TOTALS.....		10.76		1.56	9.20	28,567

### Bituminous Mulch and Cold Mix

		THIS FISCAL YEAR	
Hwy. No.	LOCATION	MILES	TONS
		COMPL.	PLACED
401	Shanly Road, Cardinal to Hwy. 33, Trenton.....	150.69	128
2	Shanly Road, Cardinal to Trenton.....	118.10	217
7TC	Hwy. 38 to Marmora.....	55.78	143
14	Hwy. 401 to Marmora.....	24.80	50
15	Hwy. 2, to Smiths Falls.....	55.65	77
16	Johnstown to Becketts Landing.....	24.96	136
29	Brockville to Smiths Falls.....	28.93	112
32	Gananoque to Hwy. 15.....	11.03	13
33	Kingston to Glenora Ferry dock.....	29.99	17
33	Trenton to Stirling.....	13.45	28
37	Hwy. 401 to Hwy. 7.....	25.96	74
38	Hwy. 2 to Hwy. 7.....	43.93	48
41	Napanee to Hwy. 7.....	31.65	150
42	Westport to Hwy. 29.....	31.44	85
43	Smiths Falls to South Gower, Mountain Township Line.....	26.85	136
49	Hwy. 401 to Bay of Quinte.....	1.48	3
62	Hwy. 14 to Madoc, Tudor Township Line.....	29.94	36
95	Hornes Point to Hwy. 96.....	7.19	31
96	Quebec Head to West-end Concession 2.....	19.90	82
133	Hwy. 33 to Hwy. 401.....	6.15	3
137	New Hwy. 401 to International boundary.....	1.35	2
SECONDARY HIGHWAYS			
502	Napanee to Marysville.....	7.83	15
509	Hwy. 7 to Snow Road.....	12.06	56
657	Hwy. 96 to Dawsons Point.....	1.36	6
TOTALS.....		760.47	1,648

**Bituminous Prime on Gravel Roads**

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS SAND USED
509	South of Clarendon.....	0.6	1,769	93
657	Dawson's Point to Hwy. 96.....	1.5	4,500	164
KING'S HIGHWAYS—				
	TOTALS.....	2.1	6,269	257

**Bituminous Resurfacing of Old Pavement**

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	Various, Prescott to Cardinal.....	8	341
2	Various, Brockville to Prescott.....	12	420
2	Various, Crystal Beach to Gananoque.....	24	636
2	Various, Gananoque west 5 mi.....	5	884
2	Various, Napanee to Hwy. 49.....	8	185
2	Various, Marysville to Shannonville.....	6	739
2	Various, Belleville to Trenton.....	5.5	414
7TC	Various, Hwy. 38 to Madoc.....	57	657
7TC	Various, Madoc to Marmora.....	10	890
14	Various, Stirling to Foxboro.....	9	430
15	Various, Smiths Falls to Lombardy.....	5	547
15	Various, Portland to 1.5 mi. north of Morton.....	22	506
29	Various, Smiths Falls to Brockville.....	27	784
32	Various, Hwy. 401 to Hwy. 15.....	12	687
33	Various, Lennox and Addington county road 8A to Glenora.....	13	860
37	Various, Moira River bridge to 1 mi. south of Roslin.....	5	554
37	Bridge deck 4 mi. north of Belleville.....	—	12
38	Various, Verona to 3.8 mi. north of Tichborne.....	20	560
41	Various, Napanee to Lennox and Addington county road 4.....	15	453
43	Various, Smiths Falls to Merrickville.....	10	978
62	Various, Eldorado to Madoc and Tudor township line.....	5.7	219
62	Various, Madoc southerly 4.2 mi.....	4.2	80
401	Interchange 115—Southbound Lane to Prescott.....	—	405
401	At Merwins Lane overpass.....	—	99
401	Various, Rockport Road easterly 2 mi.....	2	605
401	Various, Hwy. 2 to Joyceville Sideroad east and west bound lanes.....	10	1,117
401	Various, interchange 101 to Hwy. 33 east and west bound lanes.....	58	339
	TOTALS.....	353.4	14,401

**Bituminous Surface Treatment**

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BITUMULS USED	TONS CHIPS USED
95	Hwy. 96 to Hornes Point.....	7.0	21,896	1,572
96	Wolfe Island westerly 3.5 mi.....	3.5	11,143	651
SECONDARY HIGHWAYS				
509	From Hwy. 7 to Snow Road.....	13.0	38,526	1,573
657	Dawson's Point to Hwy. 96.....	1.5	4,775	279
	TOTALS.....	25.0	76,340	4,075

## Bridges Built

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
137	Old Hwy. 401 underpass.....	1966	1966	1966	Simply supported prestressed post-tensioned deck
401	Blue Church Road underpass.....	1965	1966	1966	Simply supported prestressed post-tensioned deck
401	Rockport Road overpass, west bound lane....	1965	1966	—	Rigid frame
401	Rockport Road overpass, east bound lane....	1965	1966	—	Rigid frame
401	Lansdowne Road underpass.....	1965	1966	—	Simply supported prestressed Beams
401	Kingston Mills Road underpass.....	1966	1966	1966	Simply supported prestressed beams



Hwy. 49—Quinte Skyway. Photo 8542—(Kingston)

## Concrete Pavement

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	THIS FISCAL YEAR		
				COMPL. PREV. YRS.	MILES COMPL.	SQ. YDS. PLACED	PAVEMENT WIDTH
133	Hwy. 33 to Hwy. 401.....	5.73	1966	Nil	5.73	80,665	24'

## Crushed Gravel and Stone on Roads by Contract

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
7TC	Madoc by-pass.....	—	150
16	D.H.O. patrol yard 3 mi. south of Kemptville.....	—	7,996
33			
and 133	Millhaven to Hwy. 401.....	6.72	38,098
401	Blue Church Road—3 mi. west of interchange 115.....	0.19	1,604
401	Sharpes Lane—2.7 mi. east of Hwy. 29.....	—	145
401	From 9.4 mi. east of Hwy. 2 (Gananoque) easterly for 6.4 mi.....	6.40	9,267
137	From 7.45 mi. east of Hwy. 2 (Gananoque) easterly for 1.95 mi. and		
and 401	Hwy. 137.....	5.15	43,605
401	From 1.2 mi. west of Hwy. 2 (Gananoque) easterly 10.75 mi.....	7.10	259,008
401	Joyceville Sideroad—5.5 mi. east of Hwy. 15.....	—	8,189
401	Kingston Mills Road—0.9 mi. east of Hwy. 15.....	0.73	4,678
401	Aikens Sideroad—5.5 mi. west of Hwy. 14.....	0.20	14,310
Old 401	Easterly entrance to Rockport.....	0.25	4,457
	Kingston District and Eastern Regional Office, Counter Street, Kingston.....	—	13,846
SECONDARY HIGHWAYS			
502	Marysville patrol yard—0.47 mi. east of Marysville.....	—	4,052
509	1 mi. north of Clarendon.....	—	7,990
	TOTALS.....	26.74	417,395

## Crushed Gravel and Stone on Roads by Department's Forces

HWY. No.	LOCATION	THE FISCAL YEAR	
		MILES COMPL.	TONS PLACED
401	Shanly Road—Cardinal to Hwy. 33, Trenton.....	150.69	7,322
2	Shanly Road—Cardinal to Trenton.....	118.10	7,534
7TC	Hwy. 38 to Marmora.....	55.78	4,186
15	Hwy. 2 to Smiths Falls.....	55.65	6,358
16	Johnstown to Becketts Landing.....	24.96	1,029
29	Brockville to Smiths Falls.....	28.93	1,908
32	Gananoque to Hwy. 15.....	11.03	396
37	Hwy. 401 to Hwy. 7.....	25.96	844
38	Hwy. 2 to Hwy. 7.....	43.93	497
42	Westport to Hwy. 29.....	31.44	2,565
43	Smiths Falls to South Gower—Mountain township line.....	26.85	1,850
62	Hwy. 14 to Madoc—Tudor township line.....	29.94	1,170
95	Hornes Point to Hwy. 96.....	7.19	1,010
96	Quebec Head to west end Concession 2.....	19.90	2,680
37	New Hwy. 401 to International boundary.....	1.35	211
SECONDARY HIGHWAYS			
09	Hwy. 7 to Snow Road.....	12.06	1,189
57	Hwy. 96 to Dawsons Point.....	1.36	194
	TOTALS.....	645.12	40,943



## Grading and Culverts

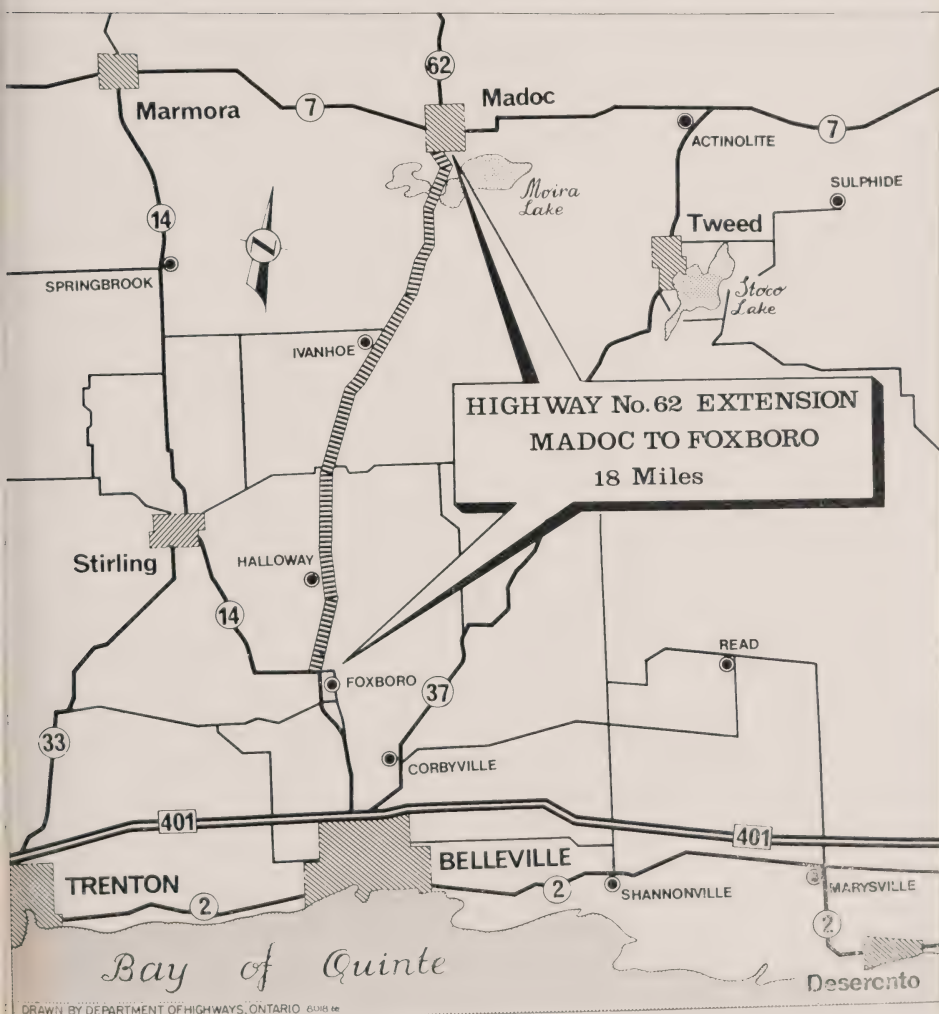
Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	MILES COMPL. THIS YEAR
7TC	Madoc by-pass.....	3.09	1965	2.94	0.15
401	Blue Church Road—3 mi. west of interchange 115 (Prescott).....	0.52	1965	0.50	0.02
401	From 9.4 mi. east of Hwy. 2 (Gananoque) easterly 6.4 mi.....	6.40	1965	0.90	5.50
401	From 7.45 mi. east of Hwy. 2 (Gananoque) east 1.95 mi. and Hwy. 137.....	5.28	1965	1.51	3.74
and 137	From 3.45 mi. east of Hwy. 2 (Gananoque) easterly 3.97 mi.....	3.97	1965	2.10	1.87
401	Kingston Mills Road (County road 11A) 0.9 mi. east of Hwy. 15.....	0.73	1966	—	0.73
401	Aikens Sideroad, 5.5 mi. west of Hwy. 14.....	0.38	1966	—	0.38
Old 401	Easterly entrance to Rockport.....	0.25	1966	—	0.25
SECONDARY HIGHWAYS					
502	Marysville patrol yard, 0.47 mi. east of Marys- ville.....	—	1966	—	100%
	Kingston District and Eastern Regional Office, Counter Street, Kingston.....	—	1966	—	100%
TOTALS.....		20.62		7.95	12.64

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
7TC	Madoc by-pass—from 1.6 mi. west of Madoc easterly 3.52 mi.....	3.52	1966	Nil	0.52	48,498
33	Millhaven to Hwy. 401.....	6.72	1965	5.10	1.62	39,764
and 133	Blue Church Road—3 mi. west of interchange 115 (Prescott).....	0.52	1965	0.33	0.19	5,230
401	From 9.4 mi. east of Hwy. 2 (Gananoque) easterly 6.4 mi.....	6.40	1965	Nil	6.40	36,644
137	From 7.45 mi. east of Hwy. 2 (Gananoque) easterly 1.95 mi. and Hwy. 137.....	5.28	1965	0.10	5.15	116,201
and 401	From 1.2 mi. west of junction of Hwy. 2 easterly 10.75 mi.....	10.75	1964	Nil	7.10	609,437
401	Kingston Mills Road (County Road 11A) 0.9 mi. east of Hwy. 15.....	0.73	1966	Nil	0.73	16,190
401	Aikens Sideroad—5.5 mi. west of Hwy. 14.....	0.38	1966	Nil	0.20	9,073
Old 401	Easterly entrance to Rockport.....	0.25	1966	Nil	0.25	7,709
SECONDARY HIGHWAYS						
502	Marysville patrol yard—0.47 mi. east of Marysville.....	—	1966	—	—	8,357
	Kingston District and Eastern Re- gional Office, Counter Street, Kingston.....	—	1966	—	—	35,867
TOTALS.....		34.55		5.53	22.16	932,970

## Granular Base Where No Grading Done

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
401	Joyceville Sideroad—5.5 mi. east of Hwy. 15.....	0.50	1966	Nil	Nil	193
401	Sharpes Lane—2.7 mi. east of Hwy. 29.....	0.43	1966	Nil	Nil	2,894
	TOTALS.....	0.93		Nil	Nil	3,087



## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
16	Johnstown storage yard.....	Shed	Salt	1966	1966
38	Verona patrol yard.....	Garage and Office	Patrol	1965	1966
42	Crosby storage yard.....	Shed	Salt	1966	1966
42	Crosby storage yard.....	Shed	Tractor	1966	1966
401	Lansdowne patrol yard.....	Garage and office	Patrol	1966	—

SECONDARY HIGHWAYS—Nil

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	8	—	—
Off-road parks maintained.....	11	—	—
Roads snowploughed and kept open, King's highways.....	—	—	871.10
Roads snowploughed and kept open, secondary highways.....	—	—	22.86
Roadside picnic places maintained.....	63	—	—
Routine maintenance, King's highways.....	—	—	871.10
Routine maintenance, secondary highways.....	—	—	22.86
Salt for de-icing roads (raw).....	—	14,927	—
Salt in sand, stockpiled.....	—	2,659	—
Sand for winter maintenance.....	—	47,755	—
Scale houses maintained.....	3	—	—
Seeding by department's forces..... (acres)	235.30	—	—
Shrubs received and planted this year.....	9,052	—	—
Signs erected or replaced.....	3,100	—	—
Snow fence erected, dismantled, stored.....	—	—	24.25
Weed control.....	1,491	—	1,415
Zone painting on King's highways..... (gals.)	14,382	—	1,129
Zone painting on secondary highways..... (gals.)	79	—	8

"QUINTE FERRY"					"QUINTE LOYALIST FERRY"					TOTAL FOR BOTH FERRIES		
MONTHS	DAYS WORKED	TRIPS	CARS	TRUCKS	TOTAL	MONTHS	DAYS WORKED	TRIPS	CARS		TRUCKS	TOTAL
April	10	328	2,516	89	2,605	April	30	1,234	14,230	1,063	15,293	17,898
May	31	1,298	10,442	512	10,954	May	30	998	10,629	952	11,581	22,535
June	30	1,400	13,622	537	14,159	June	30	1,010	12,838	1,047	13,885	28,044
July	31	1,584	22,103	538	22,641	July	31	1,131	22,436	980	23,416	46,057
August	31	1,494	19,390	592	19,982	August	31	1,069	19,398	1,176	20,574	40,556
September	30	1,346	12,608	568	13,176	September	30	975	11,892	909	12,801	25,977
October	31	1,368	11,866	599	12,465	October	31	998	11,299	949	12,248	24,713
November	30	1,297	8,616	359	8,975	November	30	945	7,856	783	8,639	17,614
December	31	1,328	7,587	382	7,969	December	31	975	6,879	725	7,604	15,573
January	7	122	940	88	1,028	January	30	1,232	11,372	876	12,248	13,276
February	Nil	Not operating		(Breaking ice)		February	28	1,205	11,321	898	12,219	12,219
March	6	64	786	27	813	March	31	1,371	15,722	1,155	16,877	17,690
TOTALS	268	11,629	110,476	4,291	114,767	TOTALS	363	13,143	155,872	11,513	167,385	282,152

"QUINTE"

Peak Traffic: July 24, 1966	
Trips.....	62
Cars.....	1,070
Trucks.....	4
Total days worked.....	268
Total trips.....	11,269
Total cars carried.....	110,476
Total trucks carried.....	114,767

"LOYALIST"

Peak Traffic: July 31, 1966	
Trips.....	45
Cars.....	1,142
Trucks.....	5
Total days worked.....	363
Total trips.....	13,143
Total cars carried.....	155,872
Total trucks carried.....	11,513



"WOLFE ISLAND FERRY"							"UPPER CANADA FERRY"							TOTAL FOR BOTH FERRIES
MONTHS	DAYS WORKED	TRIPS	CARS	TRUCKS	PEDES-TRIANS	TOTAL	MONTHS	DAYS WORKED	TRIPS	CARS	TRUCKS	PEDES-TRIANS	TOTAL	
April	1	16	224	25	182	431	April	29	470	7,110	357	7,005	14,472	14,903
May	14	212	4,544	276	3,137	7,957	May	22	318	4,959	271	5,085	10,315	18,272
June	30	485	8,838	584	7,127	16,549	June	27	296	4,285	75	5,276	9,636	26,185
July	31	494	10,932	484	10,363	21,779	July	31	333	5,685	56	8,184	13,925	35,704
August	31	486	10,865	521	9,657	21,043	August	31	349	6,389	98	8,588	15,075	36,118
September	30	480	8,541	732	6,676	15,949	September	30	344	5,354	130	5,413	10,897	26,846
October	31	498	8,088	644	4,918	13,650	October	31	360	5,283	121	4,067	9,471	23,121
November	30	480	7,670	499	3,773	11,942	November	30	340	5,089	84	2,956	8,129	20,071
December	29	439	6,389	350	2,972	9,711	December	26	309	4,721	100	2,899	7,720	17,431
January	31	494	7,835	451	3,831	12,117	January	—	—	—	—	—	—	12,117
February	28	446	6,521	386	3,700	10,607	February	—	—	—	—	—	—	10,607
March	31	494	8,640	511	5,270	14,421	March	—	—	—	—	—	—	14,421
TOTALS	317	5,024	89,087	5,463	61,606	156,156	TOTALS	257	3,119	48,875	1,292	49,473	99,640	255,796

"WOLFE ISLAND"

Peak Traffic: July 23, 1966

Trips.....18

Cars.....416

Trucks.....8

Pedestrians.....361

Total days worked.....317

Total trips.....5,024

Total cars carried.....89,087

Total trucks carried.....5,463

Total pedestrians carried.....61,606

"UPPER CANADA"

Peak Traffic: August 14, 1966

Trips.....14

Cars.....238

Trucks.....7

Pedestrians.....311

Total days worked.....257

Total trips.....3,119

Total cars carried.....48,875

Total trucks carried.....1,292

Total pedestrians carried.....49,473

**DISTRICT No. 9 — OTTAWA**

**C. R. Robertson, P.Eng., District Engineer**

**CONSTRUCTION**

**Highway 401**—Three grading contracts from Iroquois to Aultsville Road, westbound lanes, were completed.

The laying of concrete pavement on this section was started, and approximately 5 miles from Iroquois easterly was completed using a 24' paver, which lays the full width of concrete pavement in one operation. When finished this section will complete the paving of Highway 401 in the Ottawa District. The construction of two service centres East of Morrisburg was started.

A weigh scale was completed and opened at Lancaster.

**Highway 2**—A structure over Grays Creek at the east limits of Cornwall and the approaches to it were completed and opened to traffic.

**Highway 31**—A channelization at Carleton County Road 7 was completed and illuminated.

**Highway 17**—Resurfacing was carried out from Wendover to Plantagenet a distance of 9.03 miles. Under this same contract extensive repairs were made to the Nation River Bridge. The patrol yard at Hawkesbury was graded and paved.

**Ottawa Queensway Highway 17 T.C.H.**—During the 1966 season work was carried out from O'Connor St. to Alta Vista Drive. This represented the last section of new construction and linked sections of the Queensway which had previously been constructed. This section of the Queensway was opened to traffic in the Fall of 1966. Minor trim work will still be required in 1967.

**Highway 17**—Grading and Hot mix paving Antrim to Highway 29.

The work carried out, involved earth grading, drainage, granular and hot mix paving, and was completed in the Fall of 1966.

**Highway 7 and 15**—A contract for grading, storm sewers, curb, sidewalk, paving, etc. through the village of Bells Corners and reconstruction of the C.P.R. subway 1.0 mile west of Bells Corners is now well advanced. Minor trim work and surface pavement is required to complete the work by early Summer 1967.

**Highway 7B and 29**—A contract for grading, drainage, hot mix pavement, etc. through Carleton Place and at Almonte was completed during the early summer of 1966.

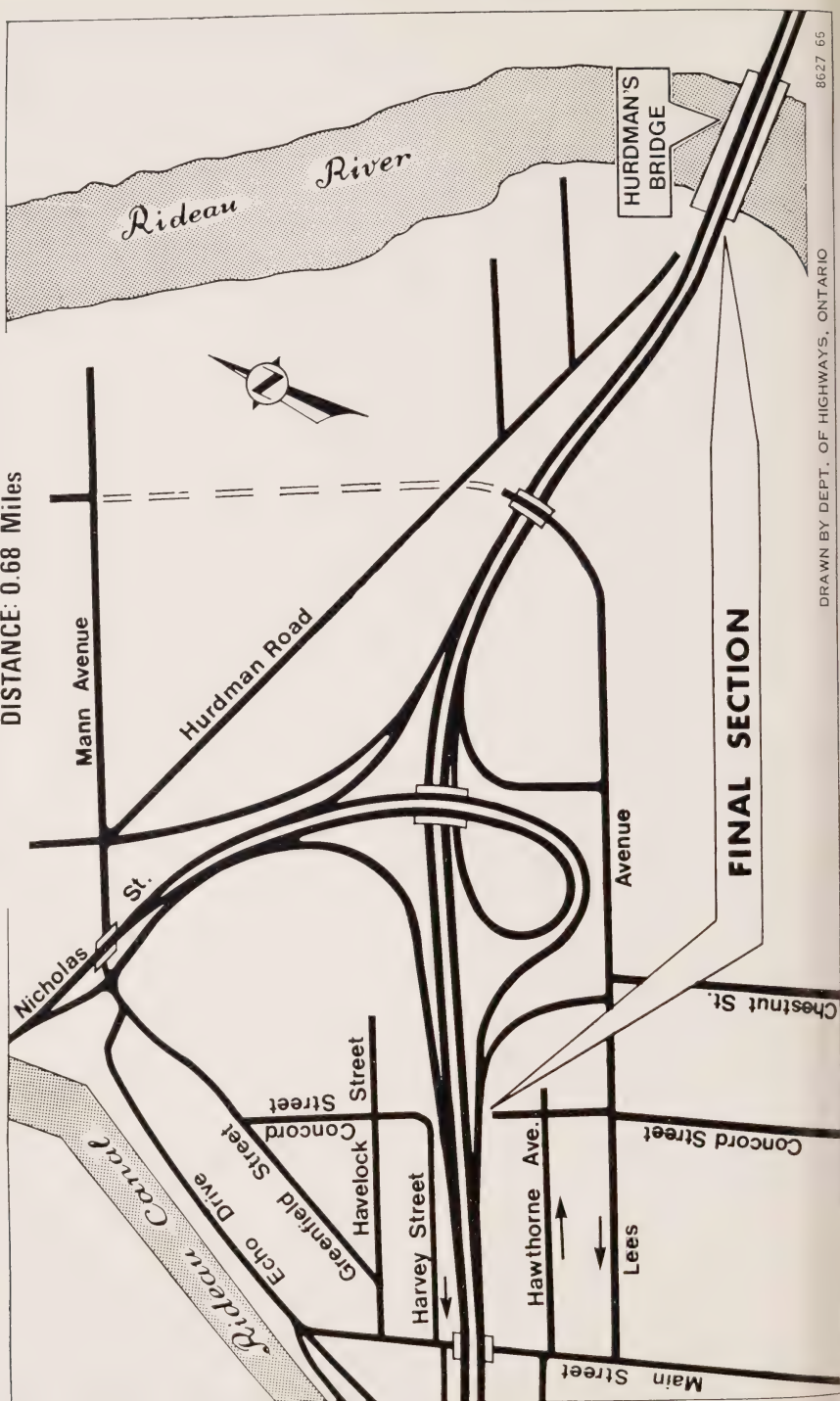
**Highway 29**—Minor grading work at Almonte and hot mix resurfacing from Carleton Place to Almonte was started in the Fall of 1966 and it is anticipated that this work will be completed during the Summer of 1967.

**Highway 60**—The portion of road from Douglas to Highway 17 was completely reconstructed in 1966 with the exception of hot mix pavement for which a contract has now been awarded. Hot mix work will be completed during the Summer of 1967.

**Highway 508**—Work on this highway consisted of reconstruction of the bridge over the Constan Creek and construction of the Calabogie By-pass together with alignment improvements which were carried out at three locations between Burnstown and Calabogie.

# FINAL LINK BEING OPENED ON THE OTTAWA QUEENSWAY FROM CONCORD STREET TO HURDMAN'S BRIDGE

DISTANCE: 0.68 Miles



## MAINTENANCE

Grass mowing was done by contract in four locations, for the first time in the Ottawa District. The results were very satisfactory.

Day labour forces reconstructed approximately 3 miles of unstable base sections on Highway 508. Two miles of mulch pavement was constructed in the Calabogie area. Patrol yard development included the construction of a new office and salt shed at Avonmore, and the construction of metal patrol garages at Eganville and Carp. Winter weather conditions were more severe than usual particularly in the month of February, due to heavy snowfalls and prolonged cold periods. The spring break up, however, was normal with little flooding or excessive frost damage. Late in the year, the District electrical crew received delivery of a new hydraulic bucket type hoist truck, which promises to be very beneficial for their operations. The final section of the Ottawa Queensway within the City limits was opened to traffic during the year. Maintenance of this freeway is to be assumed by the Department on April 1st, 1967, and the District has done considerable preparation for the assumption of this maintenance.

## Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
				COMPL. PREV. YRS.		
2	Grays Creek Bridge at east limits of Cornwall.....	0.64	1966	—	0.64	3,118
7						
nd 15	1.5 mi. west of Ottawa City limits 2.2 mi....	2.20	1965	0.25	1.45	22,489
B 29						
nd 44	Hwy. 7 northerly through Carleton Place including channelization at Almonte.....	2.51	1964	0.90	1.61	2,734
17	From village of Antrim northerly to Hwy. 29.....	6.40	1965	1	5.40	23,537
17	D.H.O. patrol yard 2.5 mi. west of Hawkesbury.....	—	1966	—	—	1,261
17TC	Carling Avenue west bound, Kent Street widening at Queensway.....	—	1966	—	—	210
17TC	Ottawa Queensway from O'Connor Street easterly to Hurdmans Bridge.....	1.36	1965	0.66	0.70	16,152
17TC	Ottawa Queensway reconstruction of south half of Alta Vista Drive including Tremblay Road underpass.....	0.50	1965	—	0.50	10,856
17						
nd 44	Junction of Hwy. 44 to Antrim easterly to Carp westerly to Almonte.....	21.61	1965	9.98	11.63	2,047
31	Hwy. 31 and County Road 7 interchange 10 mi. north of Vernon.....	1.11	1966	—	1.11	6,464
01	1.7 mi. west of Hwy. 31 ramps and related work only.....	5.70	1964	2.70	3	3,526
01	From 4 mi. east of Hwy. 31 easterly 4 mi. ramps and related work only.....	4.68	1965	—	4.68	2,092
01	1 mi. east of Hwy. 34 division weigh scale	0.87	1965	0.12	0.75	2,283
Q'sway	From O'Connor Street east to Hurdman Bridge.....	1.36	1965	—	0.86	16,345
Q'sway	Reconstruction of south half of Alta Vista Drive.....	0.50	1965	0.15	0.35	9,468
	TOTALS.....				32.68	122,582





Hwy. 17 TCH—Half mile west of Quebec boundary. Photo 8231—(Ottawa)

#### Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	MILES IN JOB	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
508	Village of Calabogie.....	2.0	Nil	2.0	2,300

#### Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
17	Chute-A-Blondeau to 17 TC.....	1.7	6,285	225

#### Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			MILES COMPL.	TONS PLACED
17	From 1.3 mi. west of Wendover to 0.3 mi. east of Plantagenet.....		0.03	16,636

#### Bituminous Surface Treatment

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS CHIPS USED
62	Richard Fraser Line easterly 9.1 mi.....	9.1	22,477	1,374
41	Pembroke to Eganville north junction of Hwy. 60.....	20	49,400	3,030
TOTALS.....		29.1	71,877	4,404

## Bridges Built

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
2	Grays Creek Bridge at east limits of Cornwall.....	1966	—	—	Prestressed concrete and structural steel
7					
nd 15	C.P.R. overhead at Bells Corners.....	1966	1966	1966	Composite steel girder and reinforced concrete
Q'sway	Nicholas Street, Queensway, Ottawa.....	1965	1966	1966	Reinforced con- crete deck
Q'sway	Lees Avenue, Queensway, Ottawa.....	1965	1966	1966	Structural steel
Q'sway	Ottawa Queensway, reconstruction of Alta Vista Drive interchange.....	1965	1966	1966	Reinforced concrete
08	Calabogie to Black Donald (Constan Creek)....	1965	1966	1966	Reinforced concrete

## Concrete Pavement

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	SQ. YDS. PLACED	PAVEMENT WIDTH
Q'sway	Ottawa Queensway Metcalfe Street to Hurdman NS Bridge.....	1.36	1965	0.62	0.74	46,097	Dual Lane 24 feet
01	Iroquois easterly 16.18 mi.....	16.18	1966	Nil	8.09	64,866	
	TOTALS.....	17.54		0.62	8.83	110,963	



Hwy. 60—Reconstruction two miles west of Hwy 17. Photo 8362-C—(Ottawa)

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	Grays Creek Bridge at east limits of Cornwall.....	0.64	41,036
7	From junction Hwy. 38 for 6 mi. easterly.....	6.00	9,541
7			
and 15	1.5 mi. west of Ottawa City Limits westerly 2.2 mi.....	1.97	23,296
7B, 29			
and 44	Hwy. 7 north easterly through Carleton Place.....	1.61	2,768
17	Antrim northerly to Hwy. 29.....	5.40	85,949
17	D.H.O. patrol yard 2.5 mi. west of Hawkesbury.....	—	978
31	Hwy. and County Road 7 interchange.....	1.11	20,586
31	From County Road 7 to County Road 5.....	5.80	8,716
60	From Douglas to Hwy. 17.....	7.10	78,975
60	D.H.O. yard, Eganville.....	—	10,037
Q'sway	Carling Avenue westbound and Kent Street widening at Queensway.....	—	350
Q'sway	Ottawa Queensway from O'Connor Street easterly to Hurdmans Bridge..	1.36	46,188
Q'sway	Ottawa Queensway reconstruction of south half of Alta Vista Drive.....	0.50	28,440
401	From 1.7 mi. west of Hwy. 31 easterly to 4 mi. east of Hwy. 31.....	3	4,523
401	From 4 mi. east of Hwy. 31 easterly.....	2.98	17,998
401	Fraser Road underpass 2.8 mi. west of junction of 2 and 34.....	0.35	13,047
401	Dual weigh scales 1 mi. east of Hwy. 34.....	0.67	5,827
401	From County Road to Iroquois easterly to County Road to Aultsville (2 north lanes) including grading, pavement and associated work at service centres E-9, E-10 Chrysler Memorial Park interchange.....	8.08	411,777
508	Curve revision vicinity Calabogie.....	0.35	10,684
508	D.H.O. yard, Calabogie.....	—	11,985
SECONDARY			
508	1.7 mi. west of Calabogie westerly 0.69 mi.....	0.49	1,905
TOTALS.....		47.41	834,606

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	Quebec border to Cardinal.....	65	1,686
7	Ottawa to junction of Hwy. 38.....	68	2,064
15	Smith Falls to Carleton Place.....	16	339
16	Ottawa to Becketts Landing.....	24	734
17	Quebec border to Petawawa-Buchanan Line.....	182	7,805
29	Carleton Place to Arnprior.....	26	1,119
31	Ottawa to Morrisburg.....	46	1,821
34	Hawkesbury to Lancaster.....	37	1,134
41	Pembroke to Eganville.....	24	351
43	Alexandria to Hallville.....	54	4,275
60	Killaloe Station to junction Hwy. 17.....	40	2,264
401	Quebec border to Cardinal.....	61	3,858
508	Burnstown to Black Donald Mine.....	24	8,468
511	Brightside to Calabogie.....	20	45
TOTALS.....		687	35,963



## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	MILES COMPL. THIS YR.
2	Grays Creek Bridge at east limits of Cornwall.....	0.64	1966	—	0.64
7B	Hwy. 7 north easterly through Carleton Place.....	1.80	1965	1.00	0.80
7					
and 15	1.5 mi. west of Ottawa City limits westerly.....	2.22	1965	1.95	0.27
17	Antrim to junction of Hwy. 29.....	6.40	1965	1.00	5.40
31	Hwy. 31 and County Road 7 interchange north of Vernon.....	1.11	1966	—	1.11
43	Approximately 1 mi. east of junction Hwys. 43 and 41	0.10	1966	—	0.10
60	From Douglas to Hwy. 17.....	7.75	1965	1.00	6.75
401	From 1.7 mi. west of Hwy. 31 easterly.....	5.70	1965	1.70	4.00
401	From 4 mi. east of Hwy. 31 easterly.....	4.70	1965	2.00	2.70
401	Fraser Road underpass.....	0.71	1966	—	0.41
Q'sway	Ottawa Queensway Main Street easterly 0.49 mi.....	0.49	1964	0.39	0.10
Q'sway	Ottawa Queensway, south half Alta Vista Drive inter- change.....	0.50	1965	0.25	0.25
508	From 1.3 mi. west of Calabogie.....	0.69	1965	0.50	0.19
	TOTALS.....	32.81		9.79	22.72

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
7						
and 15	Bells Corners.....	2.22	1965	0.70	1.52	78,823
17	Antrim to Hwy. 29.....	6.40	1965	1.00	5.40	113,790
60	Douglas to Hwy. 17.....	7.75	1966	—	7.75	209,333
31	Hwy. 31 and County Road 7 interchange north of Vernon.....	1.11	1966	—	1.11	20,586
43	Approximately 1 mi. east of junction Hwy. 43 and 41.....	0.10	1966	—	0.10	1,234
508	Calabogie by-pass.....	4.42	1965	0.90	3.52	61,864
508	Approaches to Constan Creek structure and Village of Calabogie.....	0.99	1965	0.33	0.66	11,356
	TOTALS.....	22.99		2.93	20.06	496,986

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
41	Eganville.....	6 Bay metal	Garage and patrol headquarters	1966	1966
44	Carp.....	6 Bay metal	Garage and patrol headquarters	1966	1966
43	Avonmore.....	Frame	Patrol headquarters	1966	1966
43	Avonmore.....	Frame Conc. Fdn.	Salt store	1966	1966
401	Lancaster.....	Scale House	Department of Transport scales	1965	1966





Aerial view of Ottawa Queensway. Photo 8695-C—(Ottawa)

Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	4	—	—
Calcium dust layer on gravel roads.....	—	80	—
Development roads built.....	23	—	106.5
Off-road parks maintained.....	12	—	—
Roads snowploughed and kept open, King's Highways.....	—	—	809
Roads snowploughed and kept open, secondary highways.....	—	—	50
Roadside picnic places maintained.....	45	—	—
Routine maintenance, King's Highways.....	—	—	809
Routine maintenance secondary highways.....	—	—	50
Salt for de-icing roads (raw).....	—	22,193	—
Salt in sand, stockpiled.....	—	2,400	—
Sand for winter maintenance.....	—	16,073	—
Scale houses maintained.....	4	—	—
Seeding by department's forces.....(acres)	107AC	—	—
Shrubs received and planted this year.....	16,748	—	—
Signs erected or replaced.....	8,099	—	—
Snow fence erected, dismantled, stored.....	—	—	0.5
Traffic lights installed this year.....	2	—	—
Weed control.....	—	—	520
Zone painting on King's Highways.....(gals.)	9,041	—	—
Zone painting on secondary highways.....(gals.)	67	—	—

**DISTRICT No. 10 — BANCROFT**

**J. E. Callaghan, P.Eng., District Engineer**

**CONSTRUCTION***Highway 41—66-282*

Northbrook North limit to 1.8 miles North of Cloyne—Clearing commenced and was completed in winter 1966-67. Fence removal over portions of the contract.

*Highway 41—65-140*

Griffith Northerly 6.16—grading operations were completed on the north  $\frac{1}{4}$  mile and trimming operations were completed throughout contract.

*Highway 41—66-63*

Hot mix pavement was placed on recently completed Contracts 65-140 from Griffith Northerly 6.16 miles.

*Highway 62—66-173*

Combermere—Purdy grading 5.02 miles. Rock cuts stripped, drilled and shot before the end of December, 1966. Grubbing operations also completed in 1966.

*Highway 62—66-261*

Hot mix paving on 4.5 miles from 0.3 miles north St. Ola Road to 0.2 north of Junction Secondary Highway 620. Ormsby patrol yard was graded and paved. Intermittent patching was carried out from Bannockburn to 0.2 miles north Junction Secondary Highway 620.

*Highway 60—66-163*

Hot mix paving was laid for 9.86 miles northerly from Junction of Highway 127. Contract was completed with exception of sodding.

*Highway 60—65-157*

Clean up of rockcuts, trimming and placing of Granular "A" was completed throughout Contract from Highway 127 to 9.86 miles north.

*Day Labour Operations*

During the summer of 1966 and winter of 1966/67 Day Labour Projects were carried out on portions of secondary Highways 506, 620, 512 and 519.

Day Labour clearing operations were carried out on the following work projects:

Highway 60, W.P. 334-61—9.0 miles east of Algonquin Park Headquarters easterly to 8.5 miles west of Whitney, 8.16 miles.

Highway 28, W.P. 512-64—9.1 miles north for secondary Highway 504, northerly 8.7 miles.

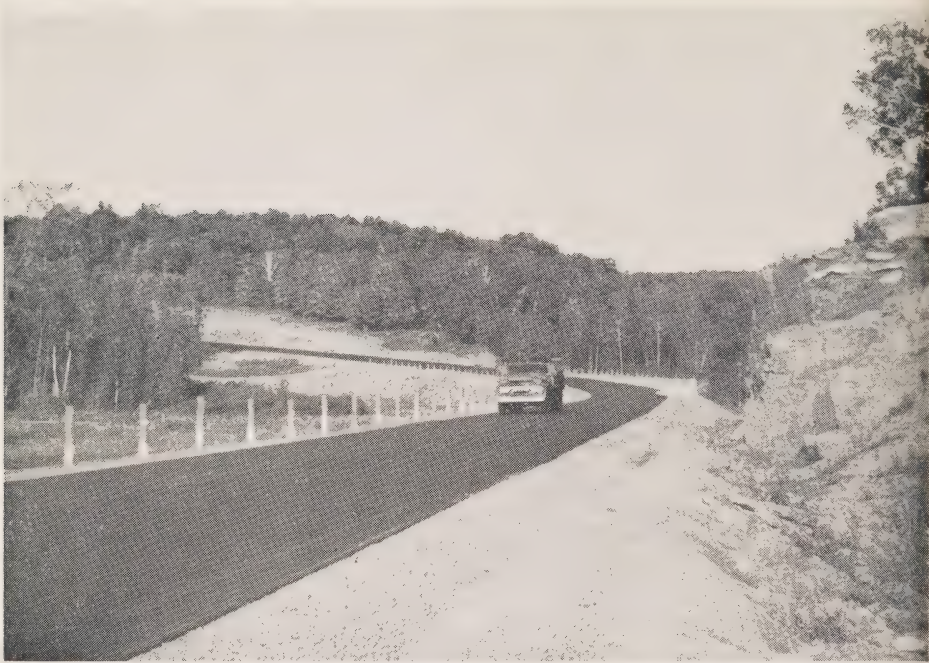
Secondary Highway 500—W.P. 29-63—6.0 miles east of Bancroft easterly 1.5 miles.

Highway 127—W.P. 39-63—Junction of Highways 62 and 127 northerly 1.3 miles.

Highway 62, W.P. 102-03—0.2 miles south of Junction Highway 629 and 620 northerly 9.3 miles.

Highway 36, W.P. 36-60-1 Junction Highway 36 and 507, southerly to Buckhorn.





Hwy. 41—Four miles north of Khartum. Photo 8823—(Bancroft)

During the winter of 1966/67 three surcharges were placed on swamps on Highway 62, W.P. 102-63.

MAINTENANCE

Prime dust layer was applied over 68 miles of highways and secondary highways, and 46.7 miles were surface treated.

Hot mix patching was completed on Highway 28 from Junction Highway 36 for 27.5 miles northerly.

New buildings erected during the year included a 5 Bay Patrol Garage at Maynooth, Salt Sheds at Eganville and Bancroft, and a Patrol Office at Combermere.

Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES	THIS FISCAL YEAR	
				COMPL. PREV. YRS.	MILEAGE COMPL.	TONS PLACED
41	From Griffith northerly.....	6.12	1966	—	6.12	11,072
60	From Algonquin Park Station Road easterly.....	8.73	1966	—	8.73	18,569
60	From relocated Hwy. 127 westerly.....	9.40	1966	—	9.40	20,510
62	From 0.3 mi. north of St. Ola Road northerly to 0.2 mi. north of secondary road 620.....	4.50	1966	—	4.50	9,375
TOTALS.....		28.75		—	28.75	59,526

**Bituminous Mulch and Cold Mix**

Hwy.		MILES	THIS FISCAL YEAR	
			PREV. YRS.	COMPL. PLACED
506	From 2.0 to 2.4 mi. west of Plevna.....	0.4	—	0.4 660
512	From 1.8 to 2.5 mi. north of Brudenell.....	0.7	—	0.7 1,155
620	From 0.1 to 0.7 mi. east of Coe Hill.....	0.6	—	0.6 990
620	From Clydesdale Road westerly.....	0.7	—	0.7 1,155
620	From 1.2 to 1.6 mi. west of junction Hwys. 62 and 620.....	0.4	—	0.4 660
	TOTALS.....	2.8	—	2.8 4,620

**Bituminous Prime on Gravel Roads**

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
500	From Bancroft easterly.....	5.0	14,080	308
504	From Apsley to Glen Alda.....	16.0	48,044	1,455
507	From junction Hwy. 503 southerly.....	17.0	42,441	1,420
513	From Dacre northerly.....	5.0	12,774	335
515	From junction Hwy. 512 southerly.....	11.0	37,596	1,009
519	Various locations.....	7.0	18,260	657
523	From 6.0 to 13.0 mi. south of junction Hwy. 60.....	7.0	10,421	372
	TOTALS.....	68.0	183,616	5,556

**Bituminous Resurfacing of Old Pavement**

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
28	From junction Hwys. 28 and 36 northerly.....	27.5	5,499
62	From Bannockburn northerly to 0.3 mi. north of St. Ola Road.....	14.7	3,587
503	Irondale to Kinmount.....	4.5	6,750
	TOTALS.....	46.7	15,836

**Bituminous Surface Treatment**

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BITUMULS USED	TONS CHIPS USED
62	Killaloe northerly.....	4.6	16,026	—
121	From junction of Hwy. 648 to 6 mi. north of Tory Hill.....	12.0	33,874	4,521
127	Hastings county line northerly.....	10.0	39,902	—
507	From junction Hwy. 36 northerly.....	10.0	21,652	1,394
	TOTALS.....	36.6	111,454	5,915





Hwy. 515—West of Palmer Rapids. Photo 8802—(Bancroft)

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
28	Apsley patrol yard (stockpiled).....	—	4,998
28	Bancroft patrol yard (stockpiled).....	—	9,995
36	Buckhorn patrol yard (stockpiled).....	—	10,000
41	From Griffith northerly.....	1.41	26,387
60	From junction Hwy. 127 westerly.....	2.72	45,794
60	From Algonquin Park Station Road easterly.....	—	16,100
62	Junction secondary Hwy. 620 southerly.....	—	11,850
62	Maynooth patrol yard (stockpiled).....	—	9,994
62	Ormsby patrol yard (stockpiled).....	—	10,004
121	Tory Hill patrol yard (stockpiled).....	—	9,998
506	3.7 mi. south of Plevna (stockpiled).....	—	8,589
512	0.5 mi. north of Brudenell (stockpiled).....	—	10,499
515	1.5 mi. west of Quadville (stockpiled).....	—	18,989
519	4.8 mi. east of junction Hwys. 121 and 519 (stockpiled).....	—	9,001
620	6 mi. east of Apsley (stockpiled).....	—	34,702
TOTALS.....		4.13	236,900

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
504	Apsley to Glen Alda.....	16.50	33,605
506	From 2.0 to 3.3 mi. west of Plevna.....	1.30	9,165
512	From 2.5 to 3.0 mi. north of Brudenell.....	0.50	2,727
519	From 2.0 to 2.5 mi. east of junction Hwy. 121.....	0.50	1,800
620	Vicinity of Chandos Lake.....	0.53	2,994
620	From 0.1 to 0.7 mi. east of Coe Hill.....	0.60	3,275
620	From 1.2 to 1.6 mi. west of junction Hwys. 62 and 620.....	0.40	468
TOTALS.....		20.33	54,034

## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	
				COMPL. PREV. YRS.	COMPL. THIS YEAR
41	Griffith northerly.....	6.16	1965	5.98	0.18
41	From Northbrook to 1.8 mi. north of Cloyne.....	7.50	1967	—	—
60	From junction Hwy. 127 westerly.....	9.86	1965	6.88	2.98
62	From Combermere to Purdy.....	5.02	1966	—	—
506	From 2.1 to 2.8 mi. west of Plevna.....	0.70	1966	—	0.70
506	From 2.8 to 3.3 mi. west of Plevna.....	0.50	1967	—	0.50
512	From 2.5 to 3.0 mi. north of Brudenell.....	0.50	1966	—	0.50
519	From 2.0 to 2.5 mi. east of junction Hwy. 121.....	0.50	1966	—	0.50
620	From 0.1 to 0.7 mi. east of Coe Hill.....	0.60	1966	—	0.60
620	Clydesdale Road westerly.....	0.70	1966	—	0.70
620	Vicinity of Chandos Lake.....	0.53	1966	—	0.53
TOTALS.....		32.57		12.86	7.19

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	
				COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL. TONS PLACED
41	From Griffith northerly.....	6.16	1965	5.24	0.92 40,367
60	From junction Hwy. 127 westerly.....	9.86	1965	6.27	3.59 101,246
62	From junction secondary Hwy. 620 southerly.....	4.50	1966	4.50	— 17,444
506	From 2.0 to 3.3 mi. west of Plevna.....	1.30	1966	—	1.30 2,766
512	From 2.5 to 3.0 mi. north of Brudenell..	0.50	1966	—	0.50 2,727
519	From 2.0 to 2.5 mi. east of junction Hwy. 121.....	0.50	1966	—	0.50 1,800
620	Vicinity of Chandos Lake.....	0.53	1966	—	0.53 2,994
620	From 0.1 to 0.7 mi. east of Coe Hill.....	0.60	1966	—	0.60 2,740
TOTALS.....		23.95		16.01	7.94 172,084

## Granular Base Where No Grading Done

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	
				COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL. TONS PLACED
504	Apsley to Glen Alda.....	16.50	1966	—	16.50 33,605

## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
62	Combermere patrol yard.....	Standard Pa- trolman's office	Patrolman's office.	1966	1966
41	Eganville patrol yard.....	Standard salt shed with 8' extension	Storage of salt	1966	1966
28	Bancroft patrol yard.....	Standard salt shed with 8' extension	Storage of salt	1966	1966
62	Maynooth patrol yard.....	5-Bay metal patrol garage	Storing equipment	1966	1966

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Calcium dust layer on gravel roads.....	—	27.5	—
Development roads built.....	—	—	10.79
Off-road parks maintained.....	25	—	—
Roads snowploughed and kept open, King's highways.....	—	—	362.01
Roads snowploughed and kept open, secondary highways.....	—	—	295.76
Roadside picnic places maintained.....	7	—	—
Routine maintenance, King's highways.....	—	—	362.01
Routine maintenance, secondary highways.....	—	—	295.76
Salt for de-icing roads (raw).....	—	7,224	—
Salt in sand, stockpiled.....	—	2,187	—
Sand for winter maintenance.....	—	28,628	—
Scale houses maintained.....	2	—	—
Seeding by department's forces..... (acres)	244	—	—
Shrubs received and planted this year.....	6,026	—	—
Signs erected or replaced.....	1,600	—	—
Snow fence erected, dismantled, stored.....	—	—	20
Weed control.....	—	—	507
Zone painting on King's highways..... (gals.)	7,060	—	—
Zone painting on secondary highways..... (gals.)	2,390	—	—



**DISTRICT No. 11 — HUNTSVILLE**

**E. H. Jones, P.Eng., District Engineer**

**CONSTRUCTION**

On Highway 11 widening to four lanes was extended northward 4.4 miles from Severn River Bridge to the Kahshe Lake Road.

New construction is underway at present, widening this Highway to four lanes from Kahshe Lake Road to Gravenhurst.

The new structure at Severn River Bridge is near completion and will soon be carrying four lanes of traffic.

Improvements were also completed at the South Junction Highway 11 and 11B at Huntsville and at the Junction of Highway 11 and the Golf Course Road on the Huntsville By-pass.

On Highway 35 7.2 miles of grading and paving were completed from Dorset southerly.

On Highway 69 at Bala a new structure and approaches have been completed over the Moon River with paving left to be done early in 1967.

On Highway 103 Trans Canada 29.6 miles of road was resurfaced from the Junction of Highway 69 southerly to the Junction of Highway 12.

On Highway 118 a Grading Contract is in progress from Port Carling to Milford Bay including a structure at Brandy Lake.



**Hwy. 11—Severn River Bridge. Photo 8875—(Huntsville)**



From Baysville westerly a 1.7 mile section of Highway 118 was completed eliminating some very poor alignment.

On Highway 124 1.2 miles of paving was completed from 1 mile south of McKellar southerly.

On Highway 632 a new structure and approaches were built at the Joseph River with improved alignment.

As in previous years a program of construction by Day Labour forces was continued.

These projects were from 0.5 to 2 miles in length and progressed through the winter months with local men and equipment.

Improvements were carried out on Highways 35, 121, 124, 518, 519, 530 and 532.

#### MAINTENANCE

During the mulch paving season approximately 18 miles of pavement were laid by District Forces.

Other work carried out by District Day Labour Forces included the screening and stockpiling of about 51,000 cubic yards of sand; cleaning and painting seven bridges

The Forestry crew carried out weed control operations along 430 miles of Highway planted approximately 16,000 shrubs and seeded about 160 acres.

A new 5-Bay Garage was erected at Shawanaga Patrol Yard.

A total of 66.7 miles of Highways and secondary Roads were primed by contract and 23.0 miles of surface treatment was carried out, also by contract.

Zone painting was carried out on 609 miles of King's and secondary Highways.

#### Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11	South entrance to Huntsville and Golf Club road intersection on Huntsville by-pass.....	0.76	1965	0.76	0.76	1,687
11	Severn River bridge at Village of Severn Bridge.....	1.03	1965	Nil	1.03	8,665
11	Severn River bridge northerly to Kahshe Lake Road.....	4.39	1966	Nil	4.39	46,230
35	From 0.7 mi. south of Hwy. 118 at Dorset southerly.....	7.24	1966	Nil	7.24	12,650
35	From 8.4 mi. south of Hwy. 60 southerly	0.65	1966	Nil	0.65	1,158
124	1.0 mi. south of McKellar southerly.....	1.18	1966	Nil	1.18	1,803
559	South junction of Hwy. 69 westerly to the junction of development road 34 R	1.43	1966	Nil	1.43	2,291
	TOTALS.....	16.68		.76	16.68	74,484

**Bituminous Mulch and Cold Mix**

HWY. No.	LOCATION	MILES IN JOB	THIS FISCAL YEAR	
			MILES COMPL.	TONS PLACED
121	From 1.0 mi. east of Haliburton to 2.0 mi. east of Haliburton..	1.0	1.0	1,650
124	From 1.5 mi. west of Hagerman-Croft township boundary to 2.6 mi. west .....	1.1	1.1	1,815
516	From the junction of Hwy. 516 and Hwy. 532 to Windermere (sections).....	5.0	5.0	3,500
518	Kearney to Sprucedale (sections only).....	2.0	2.0	3,000
518	Sand Lake westerly for 1.8 mi. Kearney easterly for 2.3 mi. Hwy. 11 easterly for 0.4 mi.....	4.5	4.5	6,750
592	Emsdale to Novar (sections).....	2.0	2.0	3,000
532	Rosseau to Parry Sound-Muskoka District boundary (sections)	2.0	2.0	3,000
TOTALS .....		17.6	17.6	22,715

**Bituminous Prime on Gravel Roads**

HWY. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
124	From 4 mi. east of McKellar to 2 mi. east of Ahmic Harbour.....	8.7	22,240	430
514	From the junction of Hwy. 35 to Interlaken.....	10.0	25,600	495
518	From Hwy. 69 to Orrville (sections).....	5.3	13,560	262
518	From Sprucedale to Bear Lake.....	7.0	17,940	346
518	From Kearney to Sand Lake.....	4.2	10,750	208
519	From Lochlin to Haliburton.....	9.0	23,020	445
520	From Dunchurch to Ardbeg.....	16.5	42,260	818
530	From 6 mi. east of Carnarvon to the junction of Hwy. 519	6.0	15,350	297
532	From 9.0 mi. north of the junction of Hwys. 118 and 532 to 10.0 mi. north.....	1.0	2,680	49
TOTALS .....		67.7	173,400	3,350



Hwy. 11—South of Kabshe Lake Road. Photo 8878—(Huntsville)

Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
103TC	From the junction of Hwy. 69 southerly to the junction of Hwy. 12.....	29.61	37,711



## Bituminous Surface Treatment

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BITUMULS USED	TONS CHIPS USED
35	Halls Lake to Carnarvon.....	7.0	18,047	910
121	Haliburton to 1 mi. east of Haliburton.....	1.0	2,621	130
519	Lochlin to junction of Hwy. 121.....	9.0	23,189	1,170
519	Haliburton to Eagle Lake (sections).....	4.0	10,334	520
532	1 mi. east of Rosseau easterly.....	2.0	5,192	260
TOTALS.....		23.0	59,383	2,990

## Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
11	Severn River bridge at the Village of Severn Bridge.....	1965	—	1966	Steel Beam
69	Moon River bridge, in town of Bala.....	1966	1966	1966	Concrete Rigid Frame
118	Brandy Lake bridge.....	1966	1966	1966	Concrete Rigid Frame
532	Joseph River bridge, 5.6 mi. north of Hwy. 118.....	1966	1966	1966	Prestressed Concrete Girder

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	Kahshe Lake Road northerly to south end of Gravenhurst interchange..	—	10,915
11	Huntsville by-pass south entrance and Golf Course Turn.....	0.76	1,052
11	Severn River bridge, Village of Severn Bridge.....	1.03	16,511
11	Severn River bridge northerly to Kahshe Lake Road.....	4.39	85,036
35	From 0.7 mi. south of Hwy. 118 (Dorset) southerly .....	7.24	41,952
35	8.4 mi. south of Hwy. 60 southerly.....	0.65	729
35	1.35 mi. north of the north entrance to Dorset.....	0.85	4,493
69	Moon River bridge 1.5 mi. south of Bala's north limits.....	0.40	3,585
118	From 4.9 mi. west of Hwy. 527 in Baysville westerly.....	1.72	44,807
118	Construction of culvert 6.7 mi. west of Hwy. 527.....	—	1,164
118	Port Carling to Milford Bay.....	2.00	32,991
21	1 mi. east of Haliburton easterly.....	1.00	5,005
24	1 mi. south of McKellar southerly.....	1.19	4,134
518	Junction of Hwys. 518 and 69 easterly.....	0.60	3,021
532	From 9 mi. north of junction of Hwy. 118 northerly.....	1.00	4,992
559	South junction of Hwy. 69 westerly.....	1.14	8,856
532	Joseph River bridge.....	1.17	8,585
TOTALS.....		25.14	277,828



## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	MILES COMPL.
				PREV. YRS.	THIS YEAR
11	Severn River bridge at Village of Severn Bridge....	1.03	1965	—	1.03
11	Severn River bridge northerly to Kahshe Lake Road.....	4.39	1966	—	4.39
35	From 0.7 mi. south of Hwy. 118 (Dorset) southerly	7.24	1965	2.00	5.24
35	2 mi. north of Dorset northerly.....	0.75	1966	—	0.75
69	Town of Bala, Moon River bridge.....	0.40	1966	—	0.40
118	4.9 mi. west of Hwy. 527 in Baysville westerly.....	1.72	1965	0.52	1.20
118	Port Carling to Milford Bay.....	4.36	1966	—	2.0
121	2.0 mi. east of Haliburton easterly.....	1.25	1966	—	1.25
121	1 mi. east of Village of Haliburton easterly.....	1.0	1966	—	1.0
124	0.2 mi. west of McKellar westerly.....	0.9	1966	—	0.9
124	1 Mi. west of Dunchurch westerly.....	0.8	1966	—	0.8
124	1.1 mi. west of McKellar westerly.....	1.0	1966	—	1.0
518	Junction of Hwy. 69 easterly.....	0.6	1966	—	0.6
519	1.3 mi. south of the north junction of Hwy. 121 southerly.....	1.5	1966	—	1.5
530	0.5 mi. east of Guilford easterly.....	0.5	1966	—	0.5
532	1.6 mi. east of Rosseau south easterly.....	2.0	1966	—	1.5
532	9 mi. north of junction of Hwy. 118 northerly.....	1.0	1966	—	1.0
632	Joseph River bridge.....	1.17	1966	—	1.17
TOTALS.....		31.61		2.52	26.23



Hwy. 35—South of Dorset. Photo 8883—(Huntsville)

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
35	1.35 mi. north of the north entrance to Dorset.....	0.85	2,500
121	From 2.0 mi. east of Haliburton easterly.....	1.25	1,485
124	1 mi. west of Dunchurch westerly.....	0.80	3,866
124	0.2 mi. west of McKellar westerly.....	0.90	2,155
124	1.1 mi. west of McKellar westerly.....	1.0	5,035
518	From the junction of Hwy. 69 easterly.....	0.6	986
519	From 1.3 mi. south of the junction of Hwy. 121 southerly.....	1.5	1,460
530	From 0.5 mi. east of Guilford easterly.....	0.5	1,600
532	1.6 mi. east of Rosseau easterly.....	2.0	1,400
TOTALS.....		9.40	20,487

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR	
					MILES COMPL.	TONS PLACED
11	Huntsville by-pass south entrance and Golf Course turn.....	0.76	1965	0.76	0.76	1,051
11	Severn River bridge, Village of Severn Bridge.....	1.03	1965	—	1.03	41,003
11	From Severn River bridge northerly to Kahshe Lake Road.....	4.39	1966	—	4.39	215,766
11	Kahshe Lake Road northerly to south end of Gravenhurst interchange.....	5.25	1966	—	—	22,240
35	0.7 mi. south of Hwy. 118 (Dorset) southerly.....	7.24	1965	—	7.24	174,017
35	1.35 mi. north of north entrance to Dorset	0.85	1966	—	0.85	23,293
35	8.4 mi. south of Hwy. 60, southerly.....	0.65	1966	—	0.65	729
35	0.7 mi. south of junction of Hwy. 118 southerly.....	7.24	1966	—	7.24	9,676
69	Moon River bridge 1.5 mi. south of Bala north limits.....	0.40	1966	—	0.40	8,084
118	From 4.9 mi. west of Hwy. 527 in Bays- ville westerly.....	1.72	1965	—	1.72	35,807
118	Port Carling to Milford Bay.....	4.36	1966	—	2.0	90,195
121	One mi. east of Haliburton easterly.....	1.00	1966	—	1.0	38,464
121	From 2.0 mi. east of Haliburton easterly.	1.25	1966	—	1.25	45,327
124	1.0 mi. south of McKellar southerly.....	1.19	1966	—	1.19	4,133
124	1.0 mi. west of Dunchurch westerly.....	0.8	1966	—	0.8	49,706
124	0.2 mi. west of McKellar westerly.....	0.9	1966	—	0.9	39,085
124	1.1 mi. west of McKellar westerly.....	1.0	1966	—	1.0	33,220
518	From the junction of Hwy. 69 easterly.....	0.6	1966	—	0.6	18,066
519	From 1.3 mi. south of the junction of Hwy. 121 southerly.....	1.5	1966	—	1.3	37,832
530	From 0.5 mi. east of Guilford easterly.....	0.5	1965	—	0.5	14,163
532	From 9 mi. north of junction of Hwy. 118 northerly.....	1.0	1966	—	1.0	31,436
532	1.6 mi. east of Rosseau south easterly.....	2.0	1966	—	1.5	29,437
559	South junction of Hwy. 69 westerly.....	1.14	1966	—	1.14	25,941
632	Joseph River bridge 5.6 mi. north of Hwy. 118.....	1.17	1966	—	1.17	26,032
TOTALS.....		47.94		0.76	39.63	1,014,703

### New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
69	Shawanaga patrol yard 15 mi. north of Parry Sound.....	Garage	Patrol	1966	1966

### Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	7	—	—
Calcium dust layer on gravel roads.....	—	320	80
Development roads built.....	—	—	5
Off-road parks maintained.....	25	—	—
Roads snowploughed and kept open, King's highways.....	10	—	395
Roads snowploughed and kept open, secondary highways.....	14	—	286
Roadside picnic places maintained.....	25	—	—
Routine maintenance, King's highways.....	—	—	395
Routine maintenance, secondary highways.....	—	—	286
Salt for de-icing roads (raw).....	—	6,820	—
Salt in sand, stockpiled.....	—	2,050	—
Sand for winter maintenance.....	—	78,800	—
Scale houses maintained.....	3	—	—
Seeding by department's forces..... (acres)	—	160	—
Shrubs received and planted this year.....	15,730	—	—
Signs erected or replaced.....	1,880	—	—
Snow fence erected, dismantled, stored.....	—	—	28
Weed control.....	—	—	430
Zone painting on King's highways.....	—	—	433
Zone painting on secondary highways.....	—	—	176

**DISTRICT No. 13 — NORTH BAY**

**G. E. French, P.Eng., District Engineer**

**CONSTRUCTION**

Two Grading Contracts awarded in 1965 for the reconstruction of Highway 17, from secondary Highway 630 Easterly for 5.43 miles and from Bissetts Creek westerly for 5.3 miles, were completed by late Summer. Both Projects were paved before the end of the Construction season.

Included in the Paving Contract for Highway 17, secondary Highway 630 easterly, was the paving of 2.5 miles in the Champlain Provincial Park, 3.2 miles east of Highway 630, much to the pleasure and benefit to persons using the park facilities.

The new structure at the Amable du Fond River, 0.70 miles east of secondary Highway 630, was also completed.

Highway 17 has now been rebuilt to modern standards from North Bay to Mattawa, and the motorist is receiving approximately 37 miles of greatly improved driving surface and geometrics.

West of North Bay on Highway 17, from Laronde Creek to Sturgeon Falls, 9.75 miles, and at the Cache Bay Road intersection with Highway 17, approximately 2 miles west of Sturgeon Falls, Grading, Granular Base and Paving commenced. Much of the Granular Base was placed, with 2 miles receiving its first coat of pavement.

Channelization was completed at the intersection of the Sherman-Milne Mine Road with Highway 11, 1 mile north of Temagami. Approximately  $\frac{3}{4}$  of a mile of Highway 11 was widened and a climbing lane and island added to control traffic movement.

Resurfacing of Highway 11 from 5.8 miles south of the Junction of Highway 11 and 64 northerly for 11.9 miles was completed by mid summer.

Hot Mix Patching was carried out on various sections of Highway 11 north of North Bay, and on Highway 17, Mackey Station easterly to Colton Lake. Total mileage patched was approximately  $5\frac{1}{2}$  miles on 36 miles of Highway.

Hot Mix Paving was completed on Highway 64 from 0.5 miles south of Lavigne, southerly for 5 miles.

Day Labour construction continued in various areas. Grading, Drainage and Granular Base was completed on Highway 63 from one mile south of Little Jocko River, southerly for one mile.

Projects started in 1966 were on—Highway 64, 18 miles north of Field for 0.75 miles, secondary Road 522, 6 miles west of Loring Westerly for one mile; secondary Road 522, 2.5 miles east of Commanda easterly for 2 miles; secondary Road 533 from 4 miles south east of Highway 63 for 2 miles, and on secondary Highway 630, from 4.5 miles north of Kiosk northerly for one mile. On Highway 63, Feronia north for 8 miles, the District commenced preparatory work to rehabilitate the Highway for future paving.

**MAINTENANCE**

Spring break-up was gradual. Flooding was negligible and the District met the usual frost heave problems.



Summer maintenance operation was routine with the following items of particular note:—

- Yellow edge lines were introduced throughout the District.
- Prime Dust Layer was applied over approximately 100 miles of gravel road.
- Bituminous Sand Seal was applied over 22 miles of old mulch pavement.
- Twenty-one miles of mulch pavement was laid.

Construction of a 6-Bay Garage at Farley's Corners and a 5-Bay Garage at Powassan was completed. Also a standard and an extended salt shed were built at the Field Patrol Yard; and an extended salt shed was constructed at Temagami.

We experienced an abnormal winter with continuous snow storms that necessitated the use of V-Plows and a greater amount of salt and treated sand.

Considerable overtime was worked in order to cope with the situation and provide a reasonable standard of winter driving.

**Automatic Signals at Railway Crossings**

Hwy. No.	Ry. Name INITIALS	LOCATION	TYPE OF SIGNAL
11	O.N.R.	1 mi. north of Temagami.....	Flashing lights and bell

**Bituminous Hot Mix Pavement**

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
11	1 mi. north of Temagami.....	0.66	1966	Nil	0.66	2,817
17TC	Bissetts Creek westerly.....	5.30	1966	Nil	5.30	13,563
17TC	5.1 mi. west of Mattawa westerly.....	5.44	1966	Nil	5.44	10,810
17TC	Laronde Creek westerly.....	2.00	1966	Nil	2.00	4,380
64	0.5 mi. south of Lavigne southerly.....	5.00	1966	Nil	5.00	8,770
TOTALS.....		18.40			18.40	40,340

**Bituminous Mulch and Cold Mix**

Hwy. No.	LOCATION	MILES IN JOB	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11	White Fawn Lake patrol yard (stock pile).....	—	—	—	998
17TC	Verner patrol yard (stock pile).....	—	—	—	1,000
63	12 to 19 mi. north of North Bay various locations.....	3.0	Nil	3.0	5,400
64	2 mi. north of Field northerly.....	1.0	Nil	1.0	1,800
64	1.0 mi. north of Field northerly.....	0.5	Nil	0.5	900
522	Commanda easterly.....	3.0	Nil	3.0	5,400
533	Hwy. 63 southerly.....	7.0	Nil	7.0	12,600
535	0.2 mi. and 2 mi. south of St. Charles southerly.....	1.0	Nil	1.0	1,800
535	4.0 mi. north of Noelville northerly.....	1.0	Nil	1.0	1,800
630	Kiosk northerly.....	3.0	Nil	3.0	5,400
654	1.8 mi. west of Hwy. 11.....	1.0	Nil	1.0	1,800
656	Holden Dam southerly.....	0.5	Nil	0.5	900
TOTALS.....		21.0		21.0	39,798



Hwy. 17—Five miles west of Mattawa. Photo 8410-A—(North Bay)

Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS SAND USED
64	Field to Marten River—various sections.....	19	49,000	2,565
64	Noelville north-easterly.....	11	28,400	1,485
524	Secondary Hwy. 522. to secondary Hwy. 534.....	3	7,700	405
528 and 528A	Hwy. 64 easterly.....	11	28,400	1,485
534	Powassan to Restoule various sections.....	13	33,500	1,755
535	Noelville northerly.....	8	20,600	1,080
539 and 539A	Field to River Valley.....	11	28,400	1,485
539	Warren to junction of secondary Hwy. 539A various sec- tions .....	15	38,600	2,025
607 and 607A	Various sections.....	6	15,400	810
TOTALS.....		97	250,000	13,095

Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	North Bay by-pass northerly various sections.....	30.00	5,570
11	5.8 mi. south of Hwy. 64 northerly.....	11.90	20,464
17TC	Mattawa—various sections.....	2.04	720
17TC	MacKey Station westerly.....	4.50	2,283
TOTALS.....		48.44	29,037

### Bituminous Surface Treatment

HWY. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS CHIPS USED
522	Farleys Corners to Arnstein—various locations.....	14	35,000	1,890
535	Hagar to St. Charles.....	6	12,500	810
630	Eau Claire southerly.....	2	5,000	270
TOTALS.....		22	52,500	2,970

### Bridges Built

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
17TC	Amable Du Fond River 9.3 mi. west of Mattawa.....	1965	1966	1966	Steel Girder
17TC	Pautois Creek—7 mi. west of Mattawa.....	1965	1966	1966	Rigid Frame

### Crushed Gravel and Stone on Roads by Contract

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	1.0 mi. north of Timagami.....	.66	5,972
11	.66 mi. south of Hwy. 64 northerly.....	11.90	27,531
11	North Bay by-pass northerly.....	30.00	3,699
11	Powassan and South River (stock piles).....	—	10,000
17	Bissetts Creek westerly.....	4.80	75,067
17	MacKey Station westerly.....	4.50	1,412
17	5.3 mi. west of Bissetts Creek to Deux Rivieres.....	5.57	62,545
17	5.1 mi. west of Mattawa westerly.....	5.43	45,450
17	Lalonde Creek westerly.....	10.10	99,842
63	Various locations (stock piled).....	—	38,000
64	0.5 mi. south of Lavigne southerly.....	5.00	5,200
522	7.0 mi. west of Loring westerly (stock piles).....	5.00	49,000
522	Commanda—various (stock piles).....	—	19,988
533	4.0 mi. south of Hwy. 63 (stock piled).....	—	11,486
534	4.0 mi. west of Powassan (stock piled).....	—	9,987
630	Kiosk (stock piled).....	—	10,000
TOTALS .....		82.96	475,179

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11 and 11B	4.0 mi. north of Burks Falls to Latchford.....	135.6	7,209
17 and 17BTC	14 mi. west of Pembroke to Hagar.....	168.4	9,039
64	Rutter to junction Hwy. 11.....	96.2	5,285
94	Callander to junction Hwy. 17.....	5.5	31
124	Hwy. 11 westerly.....	4.9	36
522 and 524	Trout Creek to 12 mi. west of Loring.....	52.5	3,335
528 and 528A	Hwy. 64 to Wolseley Bay.....	11.6	1,324
533	Mattawa to junction Hwy. 63.....	32.2	840
534	Powassan to Restoule.....	22.0	931
535	Veuve River to Noelville.....	29.9	4,255
539 and 539A	Warren to Field.....	25.6	7,587
607 and 607A	French River to junction Hwy. 64.....	7.8	324
630	Hwy. 17 to Kiosk.....	18.5	5,014
654	Hwy. 11 to Nipissing.....	14.0	3,637
TOTALS.....		624.7	48,847



Hwy. 11—Near Timagami. Photo 8453—(North Bay)



## Grading and Culverts

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	MILES COMPL.
				PREV. YRS.	THIS YEAR
11	1.0 mi. north of Timagami.....	0.66	1966	Nil	0.66
17TC	5.1 mi. west of Mattawa westerly.....	5.43	1965	2.00	3.43
17TC	Bissetts Creek westerly.....	5.30	1965	0.50	4.80
17TC	5.30 mi. west of Bissetts Creek to Deux Rivieres..	5.57	1966	Nil	5.57
17TC	Laronde Creek westerly.....	10.10	1966	Nil	9.90
17TC	Junction Cache Bay Road (intersection only).....	—	1966	Nil	Nil
63	12 to 19 mi. north-east of North Bay (various sections).....	3.00	1965	2.40	0.60
63	1.0 mi. south of Little Jocko River.....	1.00	1966	Nil	1.00
63	Feronia northerly for 8 mi. (various sections).....	2.00	1966	Nil	1.00
64	18 mi. north of Field.....	0.75	1966	Nil	0.50
522	7.0 mi. west of Loring westerly.....	6.30	1965	5.67	0.63
522	Commanda easterly.....	2.00	1965	0.25	1.75
528	4.0 mi. south-east of Noelville (culvert).....	0.20	1966	Nil	0.20
533	2.0 mi. south of Hwy. 63 southerly.....	4.00	1965	2.00	2.00
535	St. Charles (2 locations).....	1.50	1965	1.00	0.50
630	4.5 mi. north of Kiosk northerly.....	1.50	1966	Nil	0.50
TOTALS.....		49.31		13.82	33.04

## Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	MILES COMPL.	TONS PLACED
				PREV. YRS.	THIS FISCAL YEAR	
11	1 mi. north of Timagami.....	0.66	1966	Nil	0.66	7,168
17TC	5.1 mi. west of Mattawa westerly.....	5.43	1965	2.00	3.43	130,627
17TC	Bissetts Creek westerly.....	5.30	1965	0.50	4.80	115,957
17TC	5.3 mi. west of Bissetts Creek to Deux Rivieres.....	5.57	1966	Nil	5.57	166,624
17TC	Laronde Creek westerly.....	10.10	1966	Nil	9.90	347,607
17TC	Junction Cache Bay Road (intersection).....	—	1966	Nil	—	1,420
63	12 to 19 mi. north east of North Bay (various sections).....	3.00	1965	2.40	0.60	16,000
64	18 mi. north of Field.....	0.75	1966	Nil	0.50	7,272
522	Commanda easterly.....	2.00	1965	0.25	1.75	80,186
522	7.0 mi. west of Loring westerly.....	7.80	1965	5.67	2.13	59,700
528	4.0 mi. south-east of Noelville (culvert).....	0.20	1966	Nil	0.20	5,500
533	2.0 mi. south of Hwy. 63 southerly.....	4.00	1965	2.00	2.00	25,198
535	St. Charles (2 locations).....	1.50	1965	1.00	0.50	16,724
630	4.5 mi. north of Kiosk northerly.....	1.50	1966	Nil	0.50	14,202
TOTALS.....		47.81		13.82	32.54	994,185

## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
11	Timagami.....	Frame	Salt storage	1966	1966
11	Powassan.....	Metal 5 Bay garage	Equipment storage office and lunch room	1966	1966
64	Field.....	Frame 1 bay garage	Equipment storage	1966	1966
64	Field.....	Frame	Salt storage	1966	1966
64	Field.....	Frame	Loader shed	1966	1966
524	Farley's Corners.....	Metal 5 bay Garage	Equipment storage office and lunch room	1966	1966

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	6	—	—
Calcium dust layer on gravel roads.....	—	1,408.25	—
Calcium for de-icing roads.....	—	1.75	—
Development roads built.....	—	—	8.25
Off-road parks maintained.....	11	—	—
Roads snowploughed and kept open, King's Highways.....	—	—	454.1
Roads snowploughed and kept open, secondary highways.....	—	—	216.5
Roadside picnic places maintained.....	27	—	—
Routine maintenance, King's Highways.....	—	—	454.1
Routine maintenance, secondary highways.....	—	—	216.5
Salt for de-icing roads (raw).....	—	11,523	—
Salt in sand, stockpiled.....	—	1,808.80	—
Sand for winter maintenance.....	—	70,634	—
Scale houses maintained.....	2	—	—
Seeding by department's forces.....(acres)	13	—	—
Signs erected or replaced.....	2,881	—	—
Snow fence erected, dismantled, stored.....	—	—	6.0
Snow hedges planted this year.....	10,075	—	1.0
Weed control.....	—	—	283.3
Zone painting on King's Highways.....(gals.)	6,930	—	—
Zone painting on secondary highways.....(gals.)	1,521	—	—

**DISTRICT No. 14 — NEW LISKEARD**

**D. A. O. White, P.Eng., District Engineer**

**CONSTRUCTION**

Three grading contracts totalling 25 miles, including a bridge over the Tatachikapika River on Highway 144, the Sudbury-Timmins Highway, were completed by mid summer. Three additional grading contracts on Highway 144, plus the granular base contract on one of the previously mentioned grading contracts were awarded during the year and work was well advanced by the end of the fiscal year.

Also on Highway 144 one clearing job was completed by early spring and two additional jobs were awarded which were near completion by the end of the year.

The grading job on the northerly 7.6 miles of Secondary Highway 576 which leads from Highway 101 to the Kam Kotia Mine was completed in mid summer and the contract for the southerly 7.9 miles was awarded and work was well advanced when operations were shut down for the winter period.

The paving of secondary Highway 655 from Highway 101 to the Texas Gulf Mine was completed by the end of June.

In the late fall an 8-mile grading contract was awarded on Highway 67 from the south junction of Highways 11 and 67 to junction of Highways 67 and secondary Highway 610, and clearing, grubbing, and grading was carried out throughout the winter.

The contract for granular base and paving on Highway 101 for 9.3 miles east of Matheson, plus grading of the Matheson Patrol Yard and pavement patching on Highway 11 from Matheson to the junction of Highways 101 and 11 was awarded in late



**Hwy. 11—Six miles north of Swastika. Photo 5842—(New Liskeard)**



spring, but was not completed due to extremely wet weather conditions which prevailed throughout the fall.

The granular base and paving contract on Secondary Highway 650 from Highway 112 to the Adams Mine was awarded and completed by mid summer.

A contract was awarded for the construction of the approaches to the Blanche River Bridge on Highway 624, 3 miles north of the junction of secondary Highway 569, but, as a result of inclement weather during the latter part of the construction season, was behind schedule by the end of the year.

A grading and hot mix paving contract on Highway 11B from the south junction of Highway 11B and Highway 11 to the intersection of Highway 11B and Secondary Highway 567, including the Town of Cobalt Connecting Link was awarded in the early fall and contract operations were carried out throughout the winter period.

Three seeding contracts totalling 255 acres were completed on Highway 65 East, secondary Highway 576 and Highway 144.

#### MAINTENANCE

In general the past winter was more severe than usual with regard to storms and snow-fall. This resulted in a larger than average accumulation of snow throughout the area at the time spring breakup started. There was the fear of severe flooding taking place at the time of spring breakup due to the large water content in the snow, but fortunately cool nights coupled with light rainfall during the runoff period kept flooding throughout the District at a minimum. In a few areas in the District severe breakup of mulch-paved highways necessitated extensive patching and repairing operations being carried out.

Summer maintenance was primarily of a routine nature. The following items are of particular note:—308 equivalent miles of gravel highways were treated with liquid calcium chloride for dust control, 278 miles of weed and brush spraying were carried out and approximately 430 miles of highway were zone painted. The bridge crew besides carrying out routine repairs also completed several capital projects, the largest of which was the installation of a 16'7" x 10'1" multi-plate pipe arch culvert to replace an old timber truss bridge.

A new 5-bay metal patrol building was completed at Elk Lake and the bulk of the yard development at the new Larder Lake patrol site was completed. There were approximately 25 miles of highway assumed (for maintenance operations) into the District's road system during the year. New Salt Sheds were constructed by district forces at the Swastika and Englehart patrols. The construction of a new weigh scale building with related grading and yard development was commenced this year with a large percentage of the project being completed. The accounts section of the District staff occupied new quarters in a rented building leaving the former office to the District, Construction, Maintenance and Municipal Engineers and their staff. There was one 1965 "Bridge Contract" (painting) that was still not completed this year.

There were 81 sign, 99 building, 89 entrance and 17 encroachment permits issued during the year and 126 sign permits renewed. There were 64 permits for new signs issued.



## Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
101	C.N.R.	Hwy. 101 at Foleyet.....	Bell and automatic flashing light
626	O.N.R.	1.3 mi. west of junction Hwy. 101 and 11.....	Bell and automatic flashing lights
562	O.N.R.	1.3 mi. west of Hwy. 11—Thornloe.....	Bell and automatic flashing lights

## Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
655	From 4.4 mi. north of Hwy. 101 northerly	11.60	1965	4.00	7.60	11,519
101	From 0.3 mi. east of Matheson easterly.....	5.40	1966	—	5.40	11,333
650	From Hwy. 112 easterly to Adams Mine....	4.73	1966	—	4.73	7,107
TOTALS.....		21.73		4.00	17.73	29,959

## Bituminous Mulch and Cold Mix

HWY. No.	LOCATION	MILES IN JOB	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
65	19.4 to 20.5 mi. west of junction Hwy. 11.....	1.1	—	1.1	2,115
65	Elk Lake easterly for 6 mi. various sections.....	3.0	—	3.0	4,530
624	From 6.8 to 13 mi. south of Hwy. 66.....	6.2	—	6.2	9,045
101	From 18 to 28 mi. west of junction of Hwy. 576— various sections.....	6.5	—	6.5	9,330
67	From Hwy. 101 to Hwy. 610, various sections.....	2.0	—	2.0	3,100
929	From Timmins limits northerly, various sections.....	1.0	—	1.0	1,530
TOTALS.....		19.8		19.8	29,650

## Bituminous Surface Treatment

HWY. No.	LOCATION	MILES COMPL.	GALLONS BIT. USED	TONS SAND USED
569	From Hwy. 11 north to Hilliardton.....	7	,	,
577	From Hwy. 101 to Hwy. 11.....	7	,	,
610	From Dugwal to Connaught.....	5	,	,
624	From 1 mi. to 7 mi. south of Hwy. 66.....	6	,	,
TOTALS.....		25	67,056	3,124.00

## Bridges Built

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
144	Tatachikapika River 3.9 mi. south of Hwy. 101	1965	1966	1966	Structural steel and reinforced concrete

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
101	8 to 16.5 mi. west of junction Hwy. 576.....	—	53,035
101	18 to 28 mi. west of junction Hwy. 576, various locations.....	6.5	33,002
101	Matheson easterly.....	9.3	57,552
112	Approximately 2.5 mi. north of junction Hwy. 11.....	—	12,000
144	From Hwy. 101 southerly 8 mi.....	8.0	47,095
144	From 8 to 16 mi. south of Hwy. 101.....	8.0	59,290
144	24 to 32.7 mi. south of Hwy. 101.....	—	10,326
65	19.4 to 20.5 mi. west of junction Hwy. 11.....	1.1	15,996
560	Elk Lake westerly.....	—	22,990
560	Gowganda westerly.....	33.0	35,970
560	2 mi. west of Hwy. 11.....	—	4,000
560	Charlton to Elk Lake.....	20.0	12,048
569	Hilliardton.....	—	3,000
573	Approximately 2 mi. south of junction Hwys. 11 and 112.....	—	4,995
576	From Hwy. 101 northerly 7.9 mi.....	7.9	26,215
576	7.9 mi. north of Hwy. 101 northerly.....	7.6	47,708
624	Blanche River structure approaches.....	—	2,263
624	From 7 to 13 mi. south of junction Hwy. 66.....	6.2	44,996
650	From Hwy. 112 easterly to Adams Mine.....	6.2	74,143
655	From 4.4 mi. north of Hwy. 101 northerly.....	11.6	7,312
TOTALS.....		125.4	573,936



Hwy. 144—26 miles north of Gogama. Photo 8501—(New Liskeard)

## Crushed Gravel and Stone on Roads by Department's Forces

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	Latchford to 4 mi. west of Matheson.....	103	4,199
11B	South junction Hwy. 11 to north junction Hwy. 11.....	16	753
65	Quebec border to Matachewan.....	82	8,838
66	Quebec border to junction Hwy. 65.....	65	1,446
101	Quebec border to Shawmere River.....	150	18,182
558	Haileybury Town limits to Montreal River.....	17	1,193
560	Junction Hwy. 11 westerly to Gogama.....	143	20,835
562	Junction Hwy. 11 to junction Hwy. 65.....	7	657
564	Junction Hwy. 112 easterly.....	6	400
566	Matachewan to Ashley Mine.....	15	2,490
567	North Cobalt to Silver Centre.....	21	3,065
568	Hwy. 11 to C.N.R. Crossing, Kenogami.....	1	134
569	Junction Hwys. 11 and 624 to south junction Hwy. 11.....	17	426
570	Hwy. 11 easterly.....	1	2
571	Junction Hwy. 11 to junction Hwy. 562.....	3	26
572	Junction Hwy. 11 to junction Hwy. 101.....	10	495
573	Junction Hwy. 11 and 112 southerly.....	12	484
575	Hwy. 101 southerly.....	3	2,116
610	Hwy. 67 to Hwy. 101.....	12	1,247
624	Hwy. 66 southerly to junction Hwy. 569.....	25	531
626	Matheson to Porquis Junction.....	20	132
640	Junction secondary Hwy. 571 westerly.....	1	3
TOTALS.....		730	67,654

## Grading and Culverts

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	
				COMPL. PREV. YRS.	COMPL. THIS YEAR
144	From Hwy. 101 southerly.....	7.94	1965	1.19	6.75
144	From 8 to 16 mi. south of Hwy 101.....	8.31	1965	7.81	.50
144	From 16 mi. south of Hwy. 101 southerly.....	7.76	1966	—	7.00
144	From 24 mi. south of Hwy. 101 southerly.....	8.75	1965	2.19	6.56
576	From 8 to 16 mi. north of Hwy. 101.....	7.57	1965	4.46	3.11
576	From Hwy. 101 northerly.....	7.90	1966	—	4.00
624	0.3 mi. north of junction secondary Hwy. 569.....	0.74	1966	—	—
11B	From 4 mi. north of Latchford northerly.....	7.31	1966	—	0.34
65	Elk Lake easterly, various sections.....	3.00	1966	—	2.00
560	From Elk Lake westerly.....	6.00	1965	4.00	2.00
TOTALS.....		65.28		19.65	32.26

## Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	
				COMPL. PREV. YRS.	COMPL. THIS FISCAL YEAR TONS PLACED
144	Hwy. 101 southerly (new).....	7.94	1965	—	7.94 91,448
144	7.94 mi. south of Hwy. 101 southerly (new).....	8.31	1965	7.81	0.50 99,857
144	24 mi. south of Hwy. 101 southerly (new).....	8.75	1966	—	1.30 15,560
576	8 mi. north of Hwy. 101 northerly (revision and reconstruction).....	7.57	1966	4.84	2.73 105,477
576	Hwy. 101 northerly (revision and recon- struction).....	7.90	1966	—	3.40 127,641
560	From Elk Lake westerly (revision and re- construction).....	6.00	1964	4.00	2.00 71,100
TOTALS.....		46.47		16.65	17.87 511,083



Hwy. 144—Construction camp north of Gogama. Photo 8499—(New Liskeard)

Granular Base Where No Grading Done

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	THIS FISCAL YEAR	
				COMPL. PREV. YRS.	MILES COMPL.	TONS PLACED
101	Matheson easterly.....	9.36	1966	—	9.36	192,936
616	Granular lift.....	2.00	1966	—	2.00	22,968
624	From 7 mi. south of Hwy. 66 southerly...	6.00	1966	—	6.00	35,999
610	From Hwy. 101 northeasterly.....	5.00	1966	—	5.00	17,658
575	From Hwy. 101 southerly, various sec- tions.....	3.00	1966	—	3.00	4,327
101	From secondary Hwy. 576 westerly, vari- ous sections.....	12.00	1966	—	12.00	24,454
TOTALS.....		37.36			37.36	298,342

New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
11	Englehart patrol yard.....	Salt shed	Salt storage	1966	Flooring to be completed 1967
11	0.4 mi. north of New Liskeard.....	Scale house	Traffic scales	1966	To be completed 1967
66	Swastika patrol yard.....	Salt shed	Salt storage	1966	Flooring to be completed 1967



## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	2	—	—
Calcium dust layer on gravel roads.....(liquid)	—	1,963	255
Roads snowploughed and kept open, King's Highways.....	—	—	498
Roads snowploughed and kept open, secondary highways.....	—	—	373
Roadside picnic places maintained.....	16	—	—
Routine maintenance, King's Highways.....	—	—	498
Routine maintenance, secondary highways.....	—	—	392
Salt for de-icing roads (raw).....	—	12,019	—
Salt in sand, stock piled.....	—	2,024	—
Sand for winter maintenance.....	—	52,000	—
Seeding by department's forces.....(acres)	40	—	—
Shrubs received and planted this year.....	3,409	—	—
Signs erected or replaced.....	2,502	—	—
Snow fence erected, dismantled, stored.....	—	—	63
Weed control (including brush spraying).....	—	—	278
Zone painting on King's Highways.....(gals.)	4,064	—	430
Zone painting on secondary highways.....(gals.)	1,509	—	128

**DISTRICT No. 16 — COCHRANE****J. D. Foster, P.Eng., District Engineer****CONSTRUCTION**

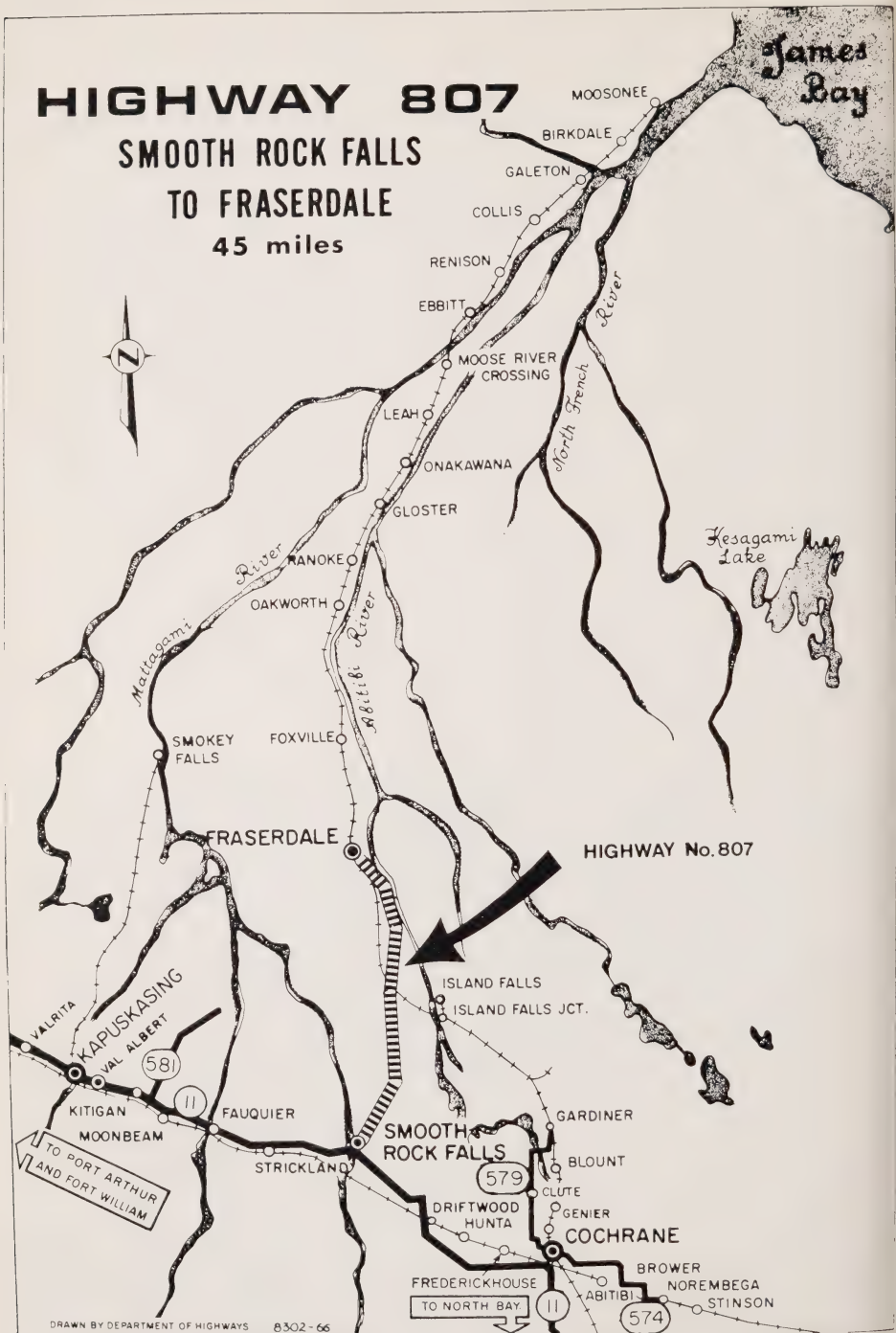
All of the grading, drainage, granular base course and hot mix paving work in the Moonbeam to Fauquier area on Highway 11, Jacob's Creek on Secondary Road Number 578, and Tertiary Road 807 from Smooth Rock Falls to Fraserdale, which was carried over from the previous year was completed this construction season.

A grading, drainage, and granular base contract from Hornepayne to 6.72 miles southerly was to be completed, but due to adverse weather conditions is being carried over to the 1967 construction season and is expected to be completed by July of this year. Work was begun on an additional 7.2 miles of secondary Highway number 631, grading drainage and granular base and a structure over the Shekak River 6.7 miles south of Hornepayne, and will be completed in the coming construction season. A grading, drainage, granular base and hot mix paving contract, from Ansonville to 0.66 miles southerly was started in August and was approximately 50% complete when the contract was shut down due to winter weather conditions setting in. It is expected that this contract will be completed by July of this year. A grading, drainage and granular base contract on secondary Road 581 from Highway 11 north to Remi Lake was awarded during the winter months and is to be started this spring and completed by fall.

The clearing contract from 15 to 28 miles south of Hornepayne was completed, but a clearing right-of-way contract on Highway 11, between 55 and 75 miles west of Hearst which was to be completed, but due to hazardous fire conditions in the summer



Hwy. 631—Survey crew south of Hornepayne. Photo 8533—(Cochrane)



and the early and heavy snow fall during the fall and winter, it was impossible to complete, and is now scheduled to be completed this spring. An additional close cut clearing contract from 74 to 94 miles west of Hearst was started in November is progressing and is expected to be completed in June of this year.

Construction of a Bailey bridge and approaches over the Abitibi River, 8.0 miles east of Cochrane on Secondary Road 574, was completed and was opened to traffic in July.

## MAINTENANCE

Day labour work of grading various short sections of secondary Highway 631 to eliminate dangerous hills and curves was carried out during last summer season and extended into Winter Work, 200,000 cubic yards of earth was moved in this operation, 125,000 cubic yards of granular "B" was applied to various Secondary Highways throughout the District. Automatic rail crossing signals were installed on secondary Highway 578. Development of the Kapuskasing Patrol yard was completed and paved.

A three bay extension to the existing patrol garage at Hornepayne was built and a three bedroom residence was constructed at the Nagagami Patrol site.

We experienced a relatively mild winter with an abundance of snow.

No problems experienced however.

### Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
578	O.N.R.	O.N.R. Mileage 5.08 Devonshire sub division Twp. Calvert.....	Flashing lights and bell

### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
11	From 2 mi. of secondary Hwy. 581 east to 1.2 mi. east of Fauquier.....	5.84	1966	Nil	5.84	9,200

### Bituminous Prime on Gravel Roads

HWY. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
83	Hearst to Lac Ste. Therese Sections.....	4.5	13,550	840
83	Hearst south 5 miles.....	5.0	14,775	900
	TOTALS.....	9.5	28,325	1,740

### Bridges Built

HWY.	YEAR	YEAR COMPL.	OPENED TO TRAFFIC	STRUCTURE
31	7.0 mi. south of Hornepayne .....	1966		Steel beam
74	6.6 mi. east of Cochrane east limits.....	1966	1966	Bailey bridge





Hwy. 631—16 miles south of Hornepayne. Photo 8515—(Cochrane)

### Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	Cochrane to Porquis Junction.....	30.0	108
11	Cochrane to Hearst.....	133.0	1,034
11	Hearst to Longlac.....	130.0	1,022
67	Iroquois-Falls to Hwy. 11.....	6.0	43
11B	Old highway through Hanna Township.....	6.20	18
11B	Old highway through Hunta.....	9.50	12
SECONDARY HIGHWAYS			
574	Cochrane to Norembea.....	18.00	3,107
577	Ansonville to Monteith.....	8.00	520
578	Herman Lake to Montrock.....	6.00	104
579	Cochrane to Gardiner.....	18.00	4,108
581	Intersection Hwy. 11 and Hwy. 581 north.....	3.50	75
583	Lake St. Therese to Mead.....	40.18	4,066
625	Junction Hwy. 11 and 625 to Caramat.....	20.00	932
631	Junction Hwy. 11 and 631 to Hornepayne.....	46.00	5,826
636	Junction Hwy. 11 and 636 to Frederickhouse.....	3.00	1,286
652	Junction Hwy. 574 and Hwy. 652 easterly to east end.....	11.00	37
807	Junction Hwy. 11 and 807 Smooth Rock Falls to north end 807.....	45.00	646
TOTALS.....		533.38	22,944

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
83	Various locations Hearst to Meade.....	23.0	20,000
74	Various locations Cochrane to Norembega.....	18.0	33,600
79	Various locations Cochrane to Gardiner.....	18.0	29,300
11	Shouldering Driftwood to Smooth Rock Falls.....	15.0	15,000
31	Junction Hwy. 11 and 631 southerly 23.0 mi.....	23.0	30,000
78	Junction Hwy. 11 and 578 easterly to Montrock.....	—	20,000
07	From Smooth Rock Falls northerly 45 mi.....	29.0	122,555
	TOTALS.....	126.0	270,455

## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	
				COMPL. PREV. YRS.	COMPL. THIS YR
78	Jacob's Creek 0.6 mi. west of Iroquois Falls.....	0.82	1965	Nil	0.82
31	From 6.72 mi. south of Hornepayne southerly 8.29 mi.....	8.29	1966	Nil	6.00
77	Ansonville southerly 0.66 mi.....	0.66	1966	Nil	0.66
	TOTALS.....	9.77			7.48

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR	
					MILES COMPL.	TONS PLACED
77	Ansonville southerly 0.66 mi.....	0.66	1966	Nil	0.66	23,240
78	Jacob's Creek 0.6 mi. west of Iroquois Falls.....	0.82	1965	Nil	0.82	5,600
31	From 6.72 mi. south of Hornepayne southerly 8.29 mi.....	8.29	1966	Nil	4.00	171,996
31	From Hornepayne to southerly 6.72 mi.....	6.72	1965	6.72	—	56,200
	TOTALS.....	16.49			5.48	257,036

## Granular Base Where No Grading Done

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
74	Cochrane easterly 3.5 mi.....	3.5	1966	3.5	36,347
79	Clute northerly 4 mi.....	4.0	1966	4.0	16,408
83	From 5 to 7 mi. north of Hwy. 11.....	2.0	1966	2.0	12,870
83	Hearst south 10 mi., various sections.....	10.0	1966	10.0	26,598
31	From 28 mi. north of Hornepayne to 6 mi. north of Hornepayne, various sections.....	22.0	1966	22.0	60,365
	TOTALS.....	41.50		41.50	152,588

### New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
11TC	Smooth Rock Falls Patrol Yard 88 ft. x 40 ft.—concrete block founda- tion and steel structure.....	4-Bay Metal patrol garage	Equipment storage	1965	1967
11TC	Kapuskasing Patrol Yard 88 ft. x 40 ft.—concrete block foundation and steel structure.....	4 Bay metal patrol garage	Equipment storage	1966	1967
11TC	Nagagami River Residential Site 40 ft. x 24 ft.—concrete pier founda- tion and frame structure aluminum siding.....	3 bedroom residence	Staff ac- commodation	1966	1967
631	Hornepayne Patrol Yard 48 ft. 6 inches x 40 ft. Addition—concrete slab foundation and frame struc- ture. 3 bay addition to existing garage to extend to 6 Bays, 97 ft. x 40 ft. ....	3 Bay garage extension	Equipment storage	1966	1967*
Town of Coch- rane	314-Fifth Ave. Detached Garage to residence 13 ft. x 24 ft.—concrete slab foundation and frame struc- ture.....	1 car garage	Residential garage	1966	1967**

\*Work still required to bring building to acceptable standards.

\*\*Wiring and painting to be completed.



Hwy. 11—Two miles north of Monteith. Photo 8523—(Cochrane)



## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	14	—	—
Calcium dust layer on gravel roads.....	—	1087.5	—
Calcium for de-icing roads.....	—	40.4	—
Roads snowploughed and kept open, King's highways.....	2	—	297.63
Roads snowploughed and kept open, secondary highways.....	12	—	220.91
Roadside picnic places maintained.....	12	—	—
Routine maintenance, King's highways.....	2	—	297.63
Routine maintenance, secondary highways.....	12	—	220.91
Salt for de-icing roads (raw).....	—	6,015	297.63
Salt in sand, stockpiled.....	—	978	—
Sand for winter maintenance.....	—	15,694	—
Scale houses maintained.....	5	—	—
Seeding by department's forces.....(acres)	194.48	—	—
Signs erected or replaced.....	1,736	—	—
Snow fence erected, dismantled, stored.....	—	—	7.6
Traffic lights installed this year—Abitibi River Bridge Hwy. 574....	2	—	—
Weed control—Highways 11, 631 and 652.....(lbs.)	—	10,025	—
.....(gals.)	—	977	388.5
Zone painting on King's highways.....(gals.)	2,532	—	338.6
Zone painting on secondary highways.....(gals.)	62	—	6.8



**DISTRICT No. 17 — SUDBURY**

**T. A. Sharpe, P.Eng., District Engineer**

**CONSTRUCTION**

The majority of the work at the beginning of the season entailed the completion of carry-over from 1965 contracts. These consisted of the placing of the granular base course from LaCloche Island Channel to Goat Island Channel on Highway 68, a distance of seven miles and hotmix paving of two four lane sections—one from Sutherland Avenue to Balsam Street on Highway 17 in Copper Cliff for 1.5 miles and the other through the Village of Garson on secondary Highway 541 for a distance of 1.1 miles.

In addition, a grading, drainage, granular base and hotmix paving contract 5.74 miles in length was completed from Val Caron to Hanmer on existing alignment of Highway 69 and a contract for grading, drainage and granular base on the proposed Sudbury to Timmins highway was completed as well as the clearing of a further 7.59 miles to the north of this.

Of the 1966 contracts, 10.63 miles of Highway 69 from the Sudbury South limits to secondary Highway 537 has been subjected to frost-heave treatment in various locations and a portion of this was resurfaced. A concrete structure and  $\frac{1}{2}$  mile of grading and granular base was completed on secondary Highway 542 in Sandfield and another concrete structure was finished on secondary Highway 634, 9.5 miles west of Val Caron. In conjunction with this latter job, 2.4 miles of grading, drainage, granular base was partially completed as well as a structure located 8.5 miles west of Val Caron on the same highway.

Of special interest in an experimental nature was the installation of Styrofoam padding to provide protection from frost on various locations of Highway 69 south of Sudbury.

These delinquent areas were sub-excavated and backfilled with clean granular material, insulated with Styrofoam panels to retard the frost penetration and resurfaced with hot mix. A system of thermo-couples was installed in these sections so that temperature readings can be taken periodically during the winter and spring to be compared with similar untreated areas.

In addition to this, elevations are being taken periodically of control points to determine the amount of upheaval still being experienced.

**MAINTENANCE**

Routine maintenance operations were carried out during the fiscal year 1966-67.

Three bridges were painted by Contract and three others were painted by Day Labour. Gabions were installed at Moxam's Creek Bridge on Highway 17 to prevent erosion. One timber structure was replaced on Highway 557 using timber, and two timber structures on Highway 542 were replaced with multi-plate pipe-arch culverts.

Alignment, shoulder and drainage improvements to Secondary Highways were extensively carried out on a priority basis. A 40-mile section of Highway 540 between Gore Bay and Little Current was surface treated with asphalt and  $\frac{3}{8}$ " chips.

New four-bay metal patrol buildings were completed at Killarney and McKerrow. New axle loading scales were installed at the Junction of Highways 17 and 108.

Precipitation during the winter of 1966-67 was the third highest recorded for the District, however, the spring run-off was gradual and the spring problems were less than anticipated.

Building permits and encroachment permits were issued. (73 entrances, 142 buildings, 6 encroachments, and 228 signs).

### Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
Old 17	C.P.R.	Whitefish—Bay Street.....	2 flashers—1 bell

### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMP.	TONS PLACED
17TC	Sutherland Ave. (Sudbury) to Balsam St. (Copper-Cliff).....	1.54	1965	Nil	1.54	5,118
541	Garson Village—D.H.O. yard and 1.1 mi. of Hwy. 541.....	2.11	1965	Nil	2.11	4,040
69	Val Caron to Hanmer and D.H.O. yard, Chelmsford.....	5.74	1965	Nil	5.74	16,753
17TC	Nairn Centre to 5.69 mi. east and 11.08 mi. west.....	11.08	1965	Nil	16.77	10,845
69TC	From Sudbury south limits to junc- tion Hwy. 537-69.....	2.1	1965	Nil	2.1	10,477
	TOTALS.....	22.57			28.26	47,233



Hwy. 17—At Sudbury. Photo 8405—(Sudbury)

Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS SAND USED
68	South Baymouth northerly for 14.0 mi.....	14.0	14,022	431
526	From Hwy. 69 to Britt.....	2.3	2,697	81
529	From Hwy. 69 to Hwy. 529A.....	12.2	23,945	910
529A	From Hwy. 529 to Bayfield Wharf.....	2.8	8,027	219
540	From Hwy. 542 to westerly.....	11.5	22,673	517
540A	From Hwy. 540 to westerly.....	2.7	6,999	191
540B	From Hwy. 540 northerly.....	1.2	3,108	85
542	From Hwy. 68 to 2.5 mi. west of Mindemoya.....	17.0	50,797	990
542A	From Hwy. 542 to Tehkumah.....	2.0	9,287	193
549	From Lake Penage northerly.....	9.0	18,394	604
551	From Hwy. 540 to Mindemoya.....	6.0	11,278	322
637	From Hwy. 69 westerly.....	25.0	92,454	2,234
644	From Hwy. 69 westerly.....	0.5	5,595	128
645	From Hwy. 529 westerly.....	2.5	4,933	203
17B	From Hwy. 17 westerly old road.....	2.2	4,216	150
TOTALS.....		110.90	278,425	7,258

Bituminous Surface Treatment

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS CHIPS USED
540 & 551	From Little Current west limits westerly 39 mi. and from junction 540 and 551 southerly 1 mi.....	41.35	144,812	4,408.2



Hwy. 144—Five miles north of Benny. Photo 8402-C—(Sudbury)



## Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO	TYPE OF STRUCTURE
				TRAFFIC	
542	Manitou River bridge at Sandfield.....	1966	1966	1966	Rigid frame
634	Whitson River bridge 8.5 mi. west of Hwy. 69 north.....	1966	1966	1966	Rigid frame
634	Whitson River bridge 9.5 mi. west of Hwy. 69 north.....	1966	1966	1966	Rigid frame

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
68	LaCloche Channel to Goat Island Channel.....	6.99	131,400
17TC	Nairn Centre to 5.69 mi. east and 11.08 mi. westerly.....	16.77	13,331
17TC	From Sutherland Ave. (Sudbury) to Balsam St. (Copper Cliff).....	1.54	4,329
68	Bowerman's Hill.....	0.51	1,909
69	Val Caron to Hanmer and D.H.O. Patrol yard Chelmsford.....	5.74	73,340
69TC	Sudbury south limits to junction Hwys. 69 and 537.....	2.1	33,163
144	Benny northerly.....	5.99	45,280
540	Devil's Elbow.....	0.93	782
541	Garson Village—D.H.O. patrol yard and 1.1 mi. of Hwy. 541.....	2.11	4,382
542	Sandfield.....	4.8	5,829
634	Whitson River Bridge.....	1.0	16,167
TOTALS.....		48.48	329,912

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	TONS PLACED
69	D.H.O. patrol yard (Paddy Lake) 6 mi. south of McFarlane Lake.....	10,000
69	1 mi. south of junction of Hwys. 69 and 537.....	5,000
108	D.H.O. patrol yard 1 mi. south of Elliot Lake.....	8,000
108	D.H.O. yard 0.5 mi. north of Hwy. 17.....	2,000
542	D.H.O. patrol yard at Mindemoya.....	4,500
542	4.85 mi. west of junction of Hwys. 551 and 542.....	4,000
542	16.0 mi. west of junction of Hwys. 551 and 542.....	2,000
542	21.1 mi. west of junction of Hwys. 551 and 542.....	2,000
542	6.9 mi. from junction of Hwys. 68 and 542.....	5,000
540	D.H.O. patrol yard, Little Current.....	10,000
542	Various.....	200
551	Various.....	810
555	2.0 mi. east of junction of Hwys. 557 and 555.....	5,993
557	Various.....	1,244
557	6.0 mi. north of junction of Hwys. 557 and 555.....	4,005
TOTALS.....		64,752



## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	MILES COMPL.
				PREV. YRS.	THIS YR.
68	La Cloche Channel to Little Current swing bridge	7.89	1965	5.00	2.89
69	Val Caron to Hanmer.....	5.74	1965	Nil	5.74
144	2.5 mi. north of Benny northerly.....	5.99	1965	Nil	5.99
537	4.3 mi. south of Hwy. 17 southerly.....	0.40	1965	Nil	0.40
542	Village of Sandfield.....	0.49	1966	Nil	0.49
542	Village of Big Lake westerly.....	0.2	1966	Nil	0.2
549	From Hwy. 17 southerly.....	2.0	1966	Nil	2.0
549	7 mi. south of Hwy. 17 southerly.....	0.2	1966	Nil	0.2
634	Junction Hwy. 144 northerly.....	1.0	1966	Nil	1.0
634	8.5 mi. west of Hwy. 69 westerly.....	0.7	1966	Nil	0.7
634	9.5 mi. west of Hwy. 69 westerly.....	0.7	1966	Nil	0.7
634	7.5 mi. west of Hwy. 69 westerly.....	0.3	1966	Nil	0.3
637	20.6 mi. of Hwy. 69 easterly.....	0.7	1966	Nil	0.7
TOTALS.....		26.31		5.00	21.31

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	THIS FISCAL YEAR MILES	TONS PLACED
				PREV. YRS.	COMPL.	
17TC	Sutherland Ave. (Sudbury) to Balsam Street. (Copper Cliff).....	1.54	1965	Nil	1.54	1,654
17TC	Nairn easterly and westerly.....	16.77	1965	Nil	16.77	3,182
68	La Cloche Channel to Goat Island Channel.....	6.99	1965	Nil	6.99	2,277
68	Bowerman's Hill.....	0.51	1965	Nil	0.51	8,897
69TC	From Sudbury south limits to junction Hwy. 69 and 537.....	10.63	1966	Nil	2.1	11,113
69	Val Caron to Hanmer and D.H.O. patrol yard, Chelmsford, vicinity of High Falls.....	5.74	1965	Nil	5.74	98,109
144	Benny northerly.....	5.99	1966	Nil	5.99	75,269
541	Village of Garson—D.H.O. patrol yard and 1.1 mi. of old Hwy. 541.....	2.11	1965	Nil	2.11	38,546
540	Devil's Elbow.....	0.93	1966	Nil	0.93	15,116
542	Sandfield.....	0.49	1966	Nil	0.49	12,374
634	Whitton River bridge 8.5 and 9.5 mi. west of Hwy. 69 north.....	1.20	1966	Nil		9,689
TOTALS.....		52.90			43.17	276,226

Granular Base Where No Grading Done

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
69TC	Shoulder stabilization 8.2 mi. south of S.H. 637 and 0.5 mi. South of S.H. 637.....	8.7	1966	—	8.7	490
540	From Ice Lake westerly to junction S.H. 540A.....	6.0	1966	—	6.0	13,922
540 & 551	S.H. 540 from Little Current west limit 39.0 mi. and S.H. 551 from junction 540 southerly 1.0.....	40.0	1966	—	40.0	6,669
542	From 2.5 mi. west of S.H. 551 westerly 5.5.....	3.0	1966	—	3.0	14,846
542	Village of Big Lake westerly.....	0.5	1966	—	0.5	45,954
549	Various locations from Hwy. 17 south- erly 7.0 mi.....	7.0	1966	—	7.0	56,818
553	Town of Massey from Hwy. 17 north- erly 1 mi.....	1.0	1966	—	1.0	4,591
555	Magog Lake southerly 1.0 mi.....	1.0	1966	—	1.0	1,682
557	Various from S.H. 555 to Matininda Lake.....	—	1966	—	—	240
634	Various locations on S.H. 634 between Val Caron and Chelmsford.....	0.75	1966	—	0.75	13,571
TOTALS.....		67.95			67.95	158,783



Hwy. 68—North of Little Current. Photo 8404-B—(Sudbury)

## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
17TC	D.H.O. patrol yard, 4 McKerrow	4 Bay metal patrol garage building	Patrol garage	1966	1966
108	D.H.O. patrol yard, Elliot Lake.. (* see below)	3 Bay patrol building	Patrol garage	1965	1966
144	D.H.O. patrol yard, Cartier.....	4 Bay metal patrol building	Patrol garage	1966	1967
637	D.H.O. patrol yard, Killarney.....	4 Bay metal patrol building	Patrol garage	1965	1966

\*This building purchased by D.H.O. in 1965. \$20,000.00 in major repairs and alterations spent on building in 1965 and 1966.

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	6	—	—
Calcium dust layer on gravel roads.....	—	1,666.658	389.10
Calcium for de-icing roads.....	—	12.3	—
Off-road parks maintained.....	20	—	—
Roads snowploughed and kept open, King's highways.....	—	—	402.74
Roads snowploughed and kept open, secondary highways.....	—	—	358.10
Roadside picnic places maintained.....	14	—	—
Routine maintenance, King's highways.....	—	—	402.74
Routine maintenance, secondary highways.....	—	—	395.0
Salt for de-icing roads (raw).....	—	13,789.718	—
Salt in sand, stockpiled.....	—	2,166.553	—
Sand for winter maintenance.....	—	54,282.40	—
Scale houses maintained.....	1	—	—
Seeding by department's forces.....(acres)	154	—	—
Shrubs received and planted this year including 7,321 guiderail markers.....	1,506	—	—
Signs erected or replaced.....	12,424	—	—
Snow fences erected, dismantled, stored.....	—	—	5.9
Snow hedges planted this year—Seedlings and trees.....	2,250	—	—
Traffic lights installed this year.....	1	—	—
Weed control.....	—	—	436.9
Zone painting on King's Highways.....(gals.)	6,068	—	341.5
Zone painting on secondary highways.....(gals.)	1,408	—	81.8

DISTRICT No. 18 — SAULT STE. MARIE

J. A. Knowles, P.Eng., District Engineer

Work on Highway 17, at Desbarats was completed with the exception of the hot mix paving which will be completed next year thus greatly improving a dangerous curve in the town of Desbarats.

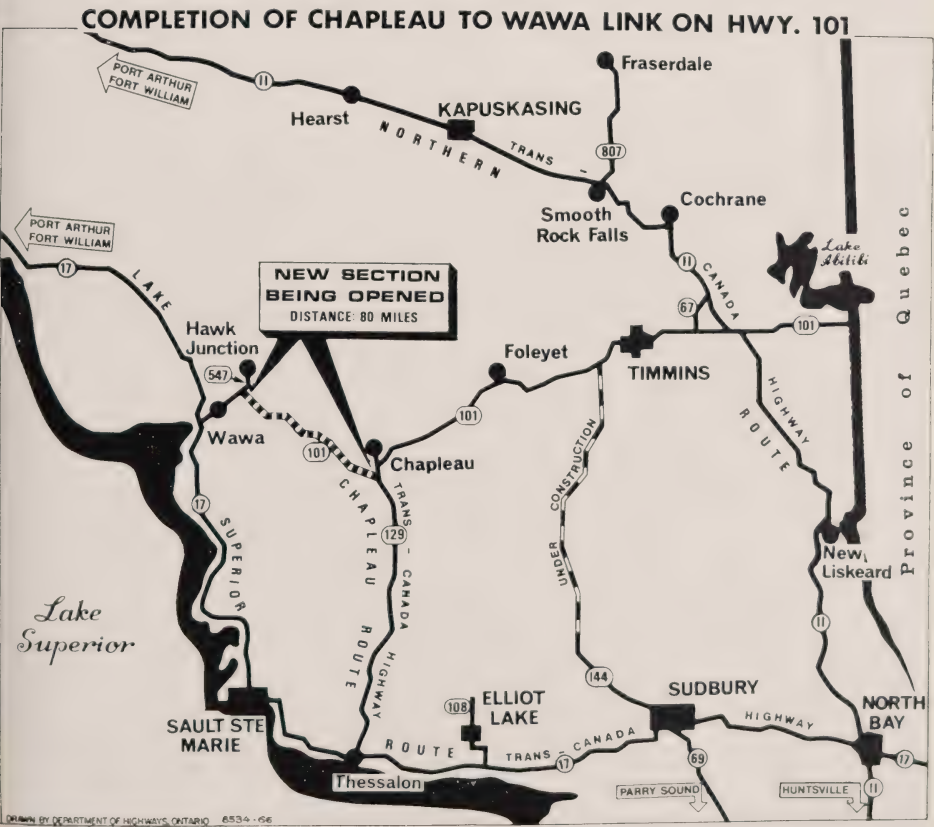
Work on Highway 17, north at Montreal River southerly for eleven miles, was carried on throughout the winter months.

Eighty-seven miles of Highway 101, from Wawa to Chapleau, was completed and opened to the public. This included two structures over the Kinniwabi River and one structure over the Jackpine River.

On Highway 129 at Aubrey Falls approximately six miles of Highway was completed and opened to the public, with the exception of a bridge over the Mississagi River which will be completed during the next year's construction season.

Highway 547 through the town of Hawk Junction was completed.

Highway 556 from Highway 552 northerly to Searchmont was reconstructed and a portion of it paved.





Reconstruction of Highway 614 continues with a stretch of the Highway from the town of Manitouwadge southerly for eight miles being opened to the public.

Work was started on Highway 651 running northerly from Highway 101 to Dalton with work commencing on the first nine miles of road leaving approximately eight miles of this road to be completed during next year's construction season.

MAINTENANCE

Two salt sheds completed at Goulais River Patrol Yard on Highway 17, North.

One Four-Bay Garage completed at Bruce Mines Patrol Yard on Highway 561.

Two-Bay Addition to the Wawa Patrol Garage on Highway 17, North, nearing completion.

Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR	
					MILEAGE COMPL.	TONS PLACED
17TC	From 8.82 mi. north of Hwy. 563 to Mica Bay.....	11.35	1966	Nil	11.35	18,351
17TC	From 0.63 mi. east to 0.89 mi. west of Desbarats River Bridge.....	1.52	1966	Nil	1.52	930
101	Chapleau easterly.....	14.61	1965	—	14.61	20,417
556	From junction Hwy. 552 northerly to Searchmont.....	15.8	1966	Nil	15.8	6,032
TOTALS.....		43.28			43.28	45,730



Hwy. 129—Mississagi River bridge construction at Aubrey Falls. Photo 8440—(Sault Ste. Marie)

Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	MILES IN JOB	MILES COMPL.	THIS FISCAL YEAR	
			PREV. YRS.	MILES COMPL.	TONS PLACED
548	Various (Hwy. 548 from Hilton Beach to Richards Landing) for 9.5 mi.....	1	Nil	1	1,500
17	Hwy. 17E and 17N, various locations at Blind River and White River.....	1	Nil	1	1,500
550	Various (Hwy. 550 from junction of 565 to Gros Cap).....	2	Nil	2	3,000
TOTALS.....		4		4	6,000

Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
550	Various locations.....	2.0	6,000.0	270.0
552	Various locations.....	1.5	5,400.0	180.0
563	Hwy. 563, 3.4 mi.....	3.4	13,600.0	450.0
TOTALS.....		6.9	25,000.0	900.0

Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
17TC	Thessalon westerly, various locations.....	2.79	3,205
TOTALS.....		2.79	3,205

Bituminous Surface Treatment

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
552	Between Hwy. 17 T.C. and secondary Hwy. 556 5 miles of various locations.....	5.0	16,000	9,056.0
548	From junction 17 T.C. and 548 to Ferry Landing.....	0.5	2,000	103.0
17N.	Various locations from Montreal River to Speckle Trout Creek, 3 mi.....	3.0	12,300	825.0
T.C.		—	—	750.0
548	Hilton Beach 2.5 mi.....	4.5	16,458	450.0
	Richards Landing 2.0 mi.....	2.6	6,000	284.0
638	2.6 mi. northerly.....	1.5	7,910	517.5
561	Hwy. 561, 1½ mi.....	2.1	9,000	400.0
17TC	Junction of 556 and 17 T.C. northerly for 2.1 mi.....	19.2	69,668	12,385.5
TOTALS.....				

Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO	TYPE OF STRUCTURE
				TRAFFIC	
101	Jackpine River Bridge.....	1965	1966	1966	Steel beam
101	Kinniwabi River Bridge west crossing.....	1966	1966	1966	Reinforced concrete
101	Kinniwabi River Bridge centre crossing.....	1966	1966	1966	Reinforced concrete
129	Mississagi River Bridge.....	1965	—	—	Steel beam





Hwy. 547—Near Hawk Junction. Photo 8481—(Sault Ste. Marie)



Hwy. 101—At Wawa Lake. Photo 8485—(Sault Ste. Marie)

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
17TC	From 8.82 mi. north of secondary Hwy. 563 northerly.....	11.35	156,990
17TC	From 0.63 mi. east to 0.89 mi. west of Desbarats River Bridge.....	1.52	23,264
17TC	From 7.00 mi. east of White River to 11.00 mi. west.....	8.00	38,394
17TC	From 19 mi. north of Hwy. 563 northerly to Montreal River.....	Nil	11,098
101	From 7.86 mi. south of junction of Hwys. 101 and 547 easterly incl. Kinniwabi River structure.....	7.97	67,874
101	From 41.8 mi. west of Hwy. 129 westerly 10.5 mi. incl. Jackpine River Bridge.....	10.50	83,248
129	From 1.5 mi. south of Aubrey Falls southerly 6.02 mi. and Mississagi River Bridge.....	6.73	53,392
547	Extension through Hawk Junction, Maple Street, northerly.....	0.40	2,590
556	From junction of Hwy. 552, northerly to Searchmont.....	15.80	82,558
614	From Town of Manitouwadge south limit southerly.....	8.95	86,000
651	From Hwy. 101 northerly.....	9.06	35,324
TOTALS.....		80.28	640,732

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
561	Secondary Hwy. 561 from Bruce Station northerly.....	1.74	31,418
638	From Ophir to Dunn's Valley.....	6.0	13,000
546	North of intersection of Hwy. 546 and 554.....	.75	14,000
129	From 2.0 mi. south of junction 101 southerly 18 mi.....	6.5	36,000
556	Searchmont northerly.....	6.0	8,000
TOTALS.....		20.99	102,418

## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	
				COMPL. PREV. YRS.	COMPL. THIS YEAR
17TC	From 8.82 mi. north of secondary Hwy. 563 northerly to Mica Bay.....	11.35	1964	8.17	3.18
17TC	From 0.63 mi. east to 0.89 mi. west of Desbarats River.....	1.52	1966	—	1.52
17TC	From 19 mi. north of Hwy. 563 northerly to Montreal River.....	11.13	1966	—	Nil
101	From 41.8 mi. west of Hwy. 129 westerly 10.5 mi. including Jackpine River Bridge.....	10.50	1965	5.46	5.04
101	From 7.86 mi. south of junction Hwys. 101 and 547 easterly. including Kinniwabi River struc- ture.....	7.97	1965	3.63	4.34
129	From 1.5 mi. south of Aubrey Falls southerly 6.02 mi. and connecting road to Hwy. 129 and Mississagi River Bridge.....	6.73	1965	4.04	2.69
547	Extension through Hawk junction, Maple Street northerly.....	0.40	1966	—	0.40
556	From junction of Hwy. 552, northerly to Search- mont.....	15.80	1966	—	15.80
614	From Town of Manitouwadge south limit southerly.....	8.95	1965	—	8.95
651	From Hwy. 101 northerly.....	9.06	1966	—	Nil
TOTALS.....		83.41		21.30	41.92



## Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	THIS FISCAL YEAR	
				COMPL. PREV. YRS.	MILES COMPL.	TONS PLACED
17	From 8.82 mi. north of secondary Hwy. 563, northerly to Mica Bay.....	11.35	1964	8.17	3.18	65,525
17TC	From 0.63 mi. east to 0.89 mi. west of Des- barats River.....	1.52	1966	—	1.52	23,264
17TC	From 19 mi. north of Hwy. 563 northerly to Montreal River.....	11.13	1966	—	4.00	58,679
101	From 41.8 mi. west of Hwy. 129, westerly 10.5 mi. including Jackpine River Bridge..	10.50	1965	5.46	5.04	13,787
101	From 7.86 mi. south of junction of Hwys. 101 and 547 easterly, including Kinniwabi River structures.....	7.97	1965	3.63	4.34	62,860
129	From 1.5 mi. south of Aubrey Falls southerly 6.02 mi. and connecting road to Hwy. 129 and Mississagi River Bridge.....	6.73	1965	4.04	2.69	42,653
614	From Town of Manitouwadge south limit southerly.....	8.95	1965	—	8.95	62,450
651	From Hwy. 101, northerly.....	9.06	1966	—	5.00	15,589
TOTALS.....		67.21		21.30	34.72	344,807

## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
561	Bruce Mines.....	4-Bay metal garage	House equipment	1965	August, 1966
17TC	Goulais River (new site).....	2 standard salt sheds	Store salt	1966	August, 1966
17N. T.C.	Wawa Garage at Wawa.....	2-bay metal Additional to existing 5- bay garage	House equipment	1966	March 31, 1967 (concrete floor unfinished)

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted (handrails).....	4	—	—
Calcium dust layer on gravel roads.....	—	—	138.9
Development roads built.....	1	—	1.48
Off-road parks maintained.....	13	—	—
Roads snowploughed and kept open, King's Highways.....	—	—	591.7
Roads snowploughed and kept open, secondary highways.....	—	—	280.4
Roadside picnic places maintained.....	32	—	—
Routine maintenance, King's Highways.....	—	—	591.7
Routine maintenance, secondary highways.....	—	—	280.4
Salt for de-icing roads (raw).....	—	7,236.165	—
Salt in sand, stockpiled.....	—	67,146 CY (127,577 tons)	—
Scale houses maintained.....	1	—	—
Seeding by department's forces.....(acres)	11	—	—
Shrubs received and planted this year.....	44	—	—
Signs erected or replaced.....	2,336	—	—
Weed control (various locations).....(gals.)	1,685	—	619.5
Zone painting on King's Highways			
Paint only—white and yellow.....(gals.)	506.1	—	—
Zone painting on secondary highways			
Paint only—white and yellow.....(gals.)	54.57	—	—

**DISTRICT No. 19 — FORT WILLIAM**

V. A. Snell, P.Eng., District Engineer

**CONSTRUCTION**

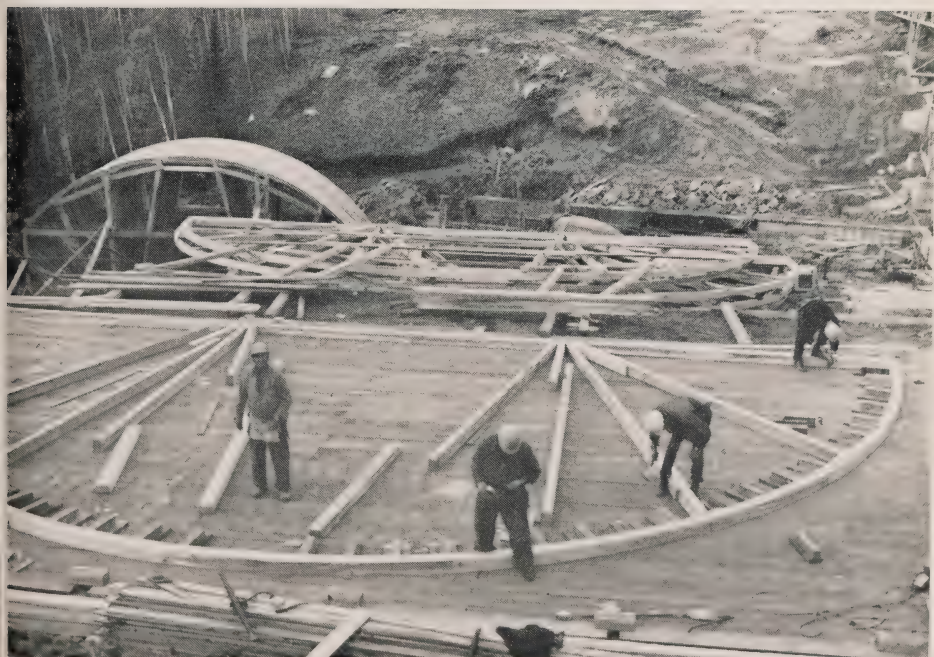
New construction contracts in the Fort William District were widespread and generally remote from District Headquarters in 1966.

The "Voyageur Route"—Highway No. 11 west of the Town of Atikokan was completely paved to the District Boundary at the Seine River, making this an important scenic road link between Fort Frances and the Lakehead. In 1966 the Seine River Bridge was the subject of an award.

At the other end of the District some 14.22 miles of Highway No. 11 from Longlac westerly were paved and at the western boundary of the District work continued on the reconstruction of Trans-Canada Highway No. 17 between Ignace and English River. Secondary Highway No. 628 from the Trans-Canada Highway into Red Rock townsite was completely reconstructed and paved.

The Lakehead Expressway encompassing the Twin Cities of Port Arthur and Fort William was commenced with the construction of a short section between Highway No. 130 and Highway No. 17A.

The award for the Seine River Bridge was a Canadian one: sponsored by the Department of Industry and the National Design Council in association with the Canadian Steel Industries Construction Council.



Hwy. 17—Construction forms for Mackenzie River Culvert 13 miles east of Port Arthur  
Photo 8698-C—(Fort William)

# MAINTENANCE

The Fort William District continued up grading the secondary roads west of Fort William by applying granular base to some 14 miles on Highways 588, 597 and 608. A total of 87,620 tons were applied to these roads during the past winter. During the past winter the number of storms were much greater although the recorded snow fall was less than previous years. Because of the greater incidents of storms the Department expenditure was much higher than previous years.

During the summer season some 133 miles of secondary roads were primed using approximately 303,000 gallons of prime.

The Department crusher produced 143,780 tons of granular "A", 28,070 tons of stone and sand for asphalt and stockpiled this material for use in construction of the Trans-Canada Highway between Poland and Savanne.

Routine maintenance was carried out on some 632 miles of King's Highways and 509 miles of secondary highways.

During the summer a by-pass and new railroad crossing was built around Savant Lake.

## Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
599	C.N.R.	Crossing one half mile east of Savant Lake Village.....	Flashing lights

## Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
11	Atikokan cut-off to Seine River.....	39.06	1965	23.00	16.06	39,583
11	Blackwater River Beardmore southerly 5.50 mi.....	3.50	1966	Nil	3.50	10,885
11	Longlac westerly 14.22 mi.....	14.22	1966	Nil	14.22	30,041
17TC	11.2 mi. west of English River westerly 13.52 mi.....	13.52	1965	5.30	8.22	22,124
17TC	23.6 mi. west of English River to Ignace.....	4.70	1966	Nil	4.70	10,110
17TC	10.3 mi. east of Port Arthur east limits easterly 3.12 mi.....	0.60	1966	Nil	0.60	1,802
Express- way						
Lake- head	Edward Street to junction Hwy. 130.....	2.74	1965	1.10	1.64	9,973
Lake- head						
Express- way	Hwy. 130 northerly to Hwy. 17A.....	0.30	1966	Nil	0.30	990
628	From Hwy. 17 to Red Rock and Town of Red Rock.....	5.03	1966	Nil	5.30	15,391
	TOTALS.....	83.67		29.40	54.54	140,899



## Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS Sand Used
588	Small sections—Stanley, Hymers, Nolalu.....	2	6,241	411
589	From junction Hwy. 11A and 17A—end.....	19	37,266	2,415
590	From junction Hwy. 588—for 15 mi.....	15	54,474	3,164
591	From junction Hwy. 589—end.....	5	21,344	913
595	From junction Hwy. 590—junction Hwy. 608.....	12	24,679	2,018
802	From Hwy. 11—Burchell Lake.....	8	19,455	904
11A and				
17A	6 mi. west of Port Arthur to Hwy. 17 and 11.....	12	18,070	1,171
585	Hwy. 17 and 11 to Pine Portage.....	23	44,810	2,245
587	Hwy. 17 and 11 to Silver Islet.....	23	51,004	3,318
590	Kakabeka Falls to Murillo.....	14	26,165	1,106
	TOTALS.....	133	303,508	17,665

## Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11			
and 17	Junction 590 westerly to Township Road to Shebandowan (various locations).....	4.7	5,760
11	Blackwater River in Beardmore northerly for 7 mi. (various patches)....	1.5	1,844
11	Junction Hwy. 11 and 17 to Sturgeon River (various patches).....	1.5	1,841
	TOTALS.....	7.7	9,445



Hwy. 11—Reconstruction south of Beardmore. Photo 8594-A—(Fort William)



Bridges Built				
Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	TYPE OF STRUCTURE
Lake- head Express- way 17TC	McIntyre River.....	1966	1966	Rigid frame concrete arch
808	Otoskwin River Bridge.....	1966	1967	Bailey bridge timber crib pile bents

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	Atikokan cut-off to Seine River.....	16.06	41,353
11	Blackwater River in Beardmore southerly 5.50 mi.....	5.50	61,554
11	Longlac westerly—14.22 mi.....	14.22	73,132
17TC	23.6 mi. west of English River to Ignace.....	8.50	102,215
17TC	11.2 mi. west of English River westerly 13.52 mi.....	13.52	163,780
17TC	10.3 mi. east of Port Arthur east limits easterly 3.12 mi.....	1.50	7,422
Lake- head Express- way	Edward Street to Hwy. 130.....	1.74	17,833
Lake- head Express- way	Hwy. 130 northerly to Hwy. 17A.....	2.20	24,180
628	From Hwy. 17 to Red Rock and Red Rock Town.....	2.30	40,695
TOTALS.....		65.54	532,164

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
17TC	Port Coldwell—Nipigon.....	105	4,000
584	Geraldton—Nakina.....	40	1,500
588	From junction 590—junction 593.....	16	22,500
589	Various locations.....	3	1,000
590	From 1.0 mi. west Hwy. 17—8.0 mi. westerly.....	7	12,500
591	From junction 589—5 mi. northerly.....	5	7,500
599	From Valora—Savant Lake.....	50	1,500
599	From Medcalf Lake—Pickle Crow.....	50	2,250
TOTALS.....		276	52,750

## Grading and Culverts

HWY. No.	LOCATION	MILES	YEAR	MILES	MILES
		IN JOB	BEGUN	COMPL. PREV. YRS.	COMPL. THIS YEAR
11	Blackwater River in Beardmore—southerly 5.50 mi.....	5.50	1966	Nil	5.50
17TC	11.2 mi. west of English River westerly 13.52 mi.....	13.52	1964	6.00	7.52
17TC	23.6 mi. west of English River to Ignace.....	11.10	1965	Nil	8.50
17TC	10.3 mi. east of Port Arthur east limits easterly 3.12 mi.....	3.12	1966	Nil	1.50
ake- ead xpress- ay	Edward Street—Hwy. 130 to Victoria Avenue in Fort William.....	2.74	1965	1.10	1.64
ake- ead xpress- ay	Hwy. 130 northerly to Hwy. 17A.....	2.63	1966	Nil	2.20
28	From Hwy. 17 to Red Rock and Town of Red Rock	5.03	1965	3.00	2.03
	TOTALS.....	43.64		10.10	28.89

## Granular Base on New Grading

HWY. No.	LOCATION	MILES	YEAR	MILES	THIS FISCAL YEAR	
		IN JOB	BEGUN	COMPL. PREV. YRS.	MILES COMPL.	TONS PLACED
11	Atikokan Cut-off to Seine River.....	39.06	1965	23.00	39.06	19,680
11	Blackwater River in Beardmore—southerly 5.50 mi.....	5.50	1966	Nil	5.50	129,197
11	Longlac westerly 14.22 mi.....	14.22	1966	Nil	14.22	8,683
17TC	11.2 mi. west of English River—westerly 13.52 mi.....	13.52	1964	6.00	7.52	316,331
17TC	23.6 mi. west of English River to Ignace.....	11.10	1965	Nil	8.50	224,287
17TC	10.3 mi. east of Port Arthur east limits easterly 3.12 mi.....	3.12	1966	Nil	1.50	7,318
ake- ead xpress- ay	Edward Street junction of Hwy. 130 to Victoria Avenue.....	2.74	1965	Nil	2.74	48,267
ake- ead xpress- ay	Hwy. 130 northerly to Hwy. 17A.....	2.63	1966	Nil	2.20	42,087
28	From Hwy. 17 to Red Rock and Town of Red Rock	5.30	1965	3.00	2.30	63,092
	TOTALS.....	97.19		32.00	83.54	858,942

## Granular Base Where No Grading Done

HWY. No.	LOCATION	MILES	YEAR	MILES	THIS FISCAL YEAR	
		IN JOB	BEGUN	COMPL. PREV. YRS.	MILES COMPL.	TONS PLACED
8	1 mi. west of junction Hwy. 17 westerly 7 mi.....	7	1966	Nil	7	43,875
7	Junction Hwy. 608 westerly 3 mi.....	3	1966	Nil	3	10,900
8	Junction Hwy. 61 to 1 mi. north Hwy. 597	4	1966	Nil	4	32,845
	TOTALS.....	14			14	87,620

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
11	2¾ mi. west of junction Hwy. 11B, (unsurveyed territory—District Rainy River).....	Six Bay metal building	Patrol garage	1965	1966
17TC	Location L.K. 399, Township of Ignace, District of Kenora.....	Six bay metal building	Patrol garage	1965	1966
17TC	Location L.K. 399, Township of Ignace, District of Kenora.....	Standard salt shed 28 ft. 6 in. x 36 ft. 6 in.	Salt storage	1965	1966
17TC	Location L.K. 399, Township of Ignace, District of Kenora.....	Standard salt shed 28 ft. 6 in. x 36 ft. 6 in.	salt storage	1965	1966
17TC	Unsubdivided, Township 86, Vicin- ity of Village of Rossport.....	Four bay metal building	Patrol garage	1966	1966
11 and 17TC	Two mi. west of junction Hwy. 130, Lot 12 and 13, Concession 2, N.K.R., Paipoonge Township.....	Brick veneer 14 ft. x 20 ft.	Weigh scales	1966	1967

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted.....	2	—	—
Calcium dust layer on gravel roads.....	—	865	—
Off-road parks maintained.....	19	—	—
Roads snowploughed and kept open, King's highways.....	—	—	632
Roads snowploughed and kept open, secondary highways.....	—	—	509
Roadside picnic places maintained.....	20	—	—
Routine maintenance, King's highways.....	—	—	632
Routine maintenance, secondary highways.....	—	—	509
Salt for de-icing roads (raw).....	—	9,700	—
Salt in sand stockpiled.....	—	1,200	—
Sand for winter maintenance.....	—	19,896	—
Scale houses maintained.....	2	—	—
Seeding by department's forces..... (acres)	10	—	—
Signs erected or replaced.....	4,000	—	—
Snow fence erected, dismantled, stored.....	—	—	15
Weed control.....	—	—	897
Zone painting on King's highways..... (gals.)	—	6,411	780
Zone painting on secondary highways..... (gals.)	—	340	37

**DISTRICT No. 20 — KENORA****J. M. Sinclair, P.Eng., District Engineer****CONSTRUCTION**

On Highway 11 paving was started from the Seine River westerly for 38.69 miles in mid summer. Work on this section is scheduled for completion in early 1967. The work of grading, granular base and paving was virtually complete on Highway 11 from Emo to Barwick by the close of the 1966 construction season. On Highway 71 grading from Nestor Falls southerly 8.3 miles was completed and paving started at the close of the construction season. The grading of a further 9.1 miles on Highway 11 commencing 9.0 miles south of Nestor Falls was started late in 1966 with completion scheduled for 1967. On Highway 105 grading and paving is now complete to 37 miles south of Ear Falls. From 37 miles south of Ear Falls to the junction of Highway 71 grading was completed and paving started on 16 miles and grading was well under-way on the remaining 10 miles. All work will be complete on Highway 105 by mid summer of 1967.

On Highway 72 grading was completed from the junction of Highway 17 northerly 2.8 miles and approximately 75 per cent complete on the next 13 miles northerly to the end of the construction season.

**MAINTENANCE**

Day labour forces throughout the district completed grading, drainage and granular base work on approximately thirty miles of secondary Highways 596, 601, 602, 611, 615, 619 and 642. Priming operations were completed on 48 miles of secondary Highways 594, 603, 613, 617 and 619 and Tertiary Road 804 by district forces.

Standard salt sheds were constructed by day labour at the following locations: one at Kenora, one at Dryden, one at Emo, one at Ignace and two at Rainy River. Four day metal patrol garages were constructed at Bergland and Nickel Lake. A standard paint shop was constructed in Kenora by the department of public works. Work on resurfacing the district garage was completed. Day labour forces carried out seeding operations on Highway 72 from the junction of Highway 17 northerly for 12.8 miles. This consisted of 130 acres.

Zone painting was completed over 506 centre-line miles and 34 edge-line miles. Weed and brush spraying was carried out over 446 miles at various locations throughout the district.

Our winter works projects consisted of clearing and brushing right-of-way in eleven locations.

District forces carried out the following bridge repairs: the Hutchinson Creek bridge, secondary Highway 609, was replaced with a 120 foot double single chord reinforced Bailey; the Pelletier bridge, secondary Highway 659, was reinforced with 300 foot single Bailey; the Lower Falls bridge, secondary Highway 609, was reinforced with new decking, Bailey stringers and repairs to abutment cribs, and the Warlington Bay bridge, secondary highway 596, was repaired with new decking and timber stringers. The LaVallee River bridge on Highway 602 was completed and opened to traffic.

A distance of 2.7 miles of the Goldpines road has been designated as secondary highway 657.



## Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
609	C.N.R.	Mileage 74.65 Redditt Subdivision at Quibell.....	Install 2 flashing lights and 1 bell.
CONNECTING LINK			
602	C.N.R.	Town of Fort Frances mile 166.02 Cusson Sub-division.....	Install 2 flashing lights and 1 bell.

## Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMP.	TONS PLACED
11	From 34.06 mi. west of the Atikokan Cut off westerly for 38.69 mi.....	15.00	1966	Nil	15.00	42,871
11	From junction of Hwy. 602 to Barwick for 7.25 mi.....	4.60	1965	Nil	4.60	12,616
17TC	From Kenora town limits east 5.27 mi. Hot mix paving and patching east and west of Kenora for 11.88 mi.....	17.15	1965	13.00	4.15	9,525
17TC	Paving at district garage approximately 4 mi. east of Kenora.....	n/a	1966	n/a	n/a	5,164
71	From Nestor Falls southerly including Caliper Lake Park and Government Dock Road 10.85 mi.....	Nil	1966	Nil	Nil	608
105	From 27.35 mi. south of Ear Falls southerly for 9.99 mi.....	9.99	1966	Nil	9.99	15,124
105	From junction of Hwy. 17 northerly including Ely Lake and Redvers patrol yards 16.49 mi.....	Nil	1966	Nil	Nil	7,753
TOTALS.....		46.74		13.00	33.74	93,661



Hwy. 72—Reconstruction 15 miles north of Hwy. 17. Photo 8581—(Kenora)

Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	THIS FISCAL YEAR		
		MILES COMPL.	GALLONS BIT. USED	TONS SAND USED
594	Dryden to junction of Hwy. 17.....	22.00	79,450	945
603	Dymont to junction with Hwy. 17.....	2.80	9,200	132
613	4 mi. north of junction Hwy. 11 to 9 mi. north.....	5.00	17,500	450
617	Junction with Hwy. 11 north for 1 mi.....	1.00	3,000	90
619	Junction with Hwy. 11 north east for 1 mi.....	1.00	3,000	90
804	Junction with Hwy. 105 to lower Manitou Falls Dam.....	13.20	48,877	256
TOTALS.....		45.00	161,027	1,963

Bituminous Surface Treatment

Hwy. No.	LOCATION	DURING THIS FISCAL YEAR		
		MILEAGE COMP.	GALLONS BITUMULS USED	TONS $\frac{5}{8}$ " CR. GRAV USED
602	Fort Frances west limits to 15 mi. west.....	1.80	7,200	98
TOTALS.....		1.80	7,200	98

Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
602	LaVallee River Bridge replacement 14 mi. west of the Town of Fort Frances.....	1965	1966	1966	Steel and concrete
609	Hutchison Creek Bridge 3.8 mi. west of Hwy. 105.....	1967	1967	1967	Bailey
659	Pelletier Bridge 10 mi. east of Hwy. 128.....	1967	1967	1967	Bailey
659	Rice Creek Bridge 7 mi. east of Hwy. 128.....	1965	1966	1966	Bailey

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	From junction with Hwy. 602 at Emo westerly to Barwick—length 7.25 mi.....	6.41	88,837
11	From 34.06 mi. west of the Atikokan cut off westerly 38.69 mi.....	6.00	31,130
71	From Nestor Falls southerly for 8.34 mi.....	6.09	78,582
71	From 9 mi. south of Nestor Falls southerly for 9.10 mi.....	Nil	6,702
71	From Nestor Falls southerly 9.05 mi. including 0.03 mi. of old Hwy. 71, Government Dock Road and Caliper Lake Road for a total of 10.85 mi.....	Nil	3,653
72	From the junction with Hwy. 17 northerly for 12.84 mi.....	10.79	84,794
72	From 12 mi. north of junction with Hwy. 17 northerly for 13 mi.....	8.00	23,577
05	From junction with Hwy. 17 northerly for 8.19 mi.....	4.92	47,605
05	From 8.6 mi. north of Hwy. 17 northerly 8.1 mi.....	6.64	93,076
05	From junction with Hwy. 17 northerly for 16.19 mi. including the Red- vers and Ely Lake patrol yards.....	16.19	19,530
05	From 16.16 mi. north of Hwy. 17 northerly for 9.55 mi.....	6.40	17,023
05	From 27.25 mi. south of Ear Falls southerly for 9.99 mi.....	9.99	18,375
05	From 27.3 mi. south of Ear Falls southerly for 10.05 mi.....	.50	27,694
94	From Dryden westerly for 5 mi.....	5.00	9,996
01	Supply and apply ⅝ crushed gravel various locations.....	Nil	25,016
05			
TOTALS.....		86.93	575,590

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	Rainy River easterly to Seine River Bridge.....	116.70	592
17TC	Ontario-Manitoba boundary to west limits of Ignace.....	184.80	1,341
71	Junction with Hwy. 17 at Longbow Corners southerly to junction with Hwy. 11.....	96.60	1,018
72	Junction with Hwy. 17 near Dinorwic northerly to Sioux Lookout.....	43.00	274
105	Junction with Hwy. 17 at Vermilion Bay northerly to Red Lake.....	108.90	419
116	From junction with Hwy. 72 at Patricia Corners westerly to Hudson....	10.00	380
119	From junction with Hwy. 17 northerly to Richan.....	13.00	60
125	From junction with Hwy. 105 northerly to Cochenour.....	8.50	54
128	Kenora north limits northerly to Redditt.....	17.80	479
594	From junction with Hwy. 17 easterly to Dryden.....	21.50	30
596	Keewatin (north limits) north-westerly to Minaki.....	29.60	290
598	Junction with Hwy. 128 (easterly) to junction with Hwy. 604.....	2.80	119
600	From Rainy River north-easterly to junction with Hwy. 71.....	59.00	1,572
601	Junction with Hwy. 17 (east leg) to junction with Hwy. 17 (west leg)....	16.10	143
602	Junction with Hwy. 613 to Emo.....	14.20	3,824
603	From junction with Hwy. 17 at Borups Corners.....	2.80	24
604	Kenora (east limits) north-easterly to the Kenora Airport.....	5.20	22
605	Junction with Hwy. 17 to end of road.....	7.70	1,350
609	Junction with Hwy. 17 northerly to Clay Lake.....	9.80	352
611	Junction with Hwy. 602 northerly to end of road.....	12.50	695
613	Junction with Hwy. 11 north to Lake Despair and south to Hwy. 602....	25.50	1,598
615	Junction with Hwy. 71 north-easterly to Clearwater Lake.....	12.50	16
617	From junction with Hwy. 11 at Stratton to junction with Hwy. 600.....	14.40	1,890
618	From junction with Hwy. 105 to the Starratt Olson Mine site.....	7.20	4
641	Junction with Hwy. 17 northerly to junction with Hwy. 596.....	8.40	3,018
642	From First Street in Sioux Lookout to Alcona.....	11.50	1,796
647	Junction with Hwy. 17 north-westerly to Blue Lake.....	5.30	4
659	Junction with Hwy. 604 north-westerly to Hwy 128.....	11.30	24
804	Junction with Hwy. 105 to the Manitou Falls Dam.....	13.20	39
TOTALS		889.80	21,427



Hwy. 71—Paving south of Nestor Falls. Photo 8573—(Kenora)



## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	MILES COMPL. THIS YR.
11	From junction with Hwy. 602 westerly to Barwick 7.25 mi.....	7.25	1965	Nil	7.25
71	From Nestor Falls southerly for 8.34 mi.....	8.34	1965	2.25	6.09
71	From 9 mi. south of Nestor Falls southerly 9.10 mi.....	9.10	1966	Nil	Nil
72	From the junction with Hwy. 17 northerly for 12.84 mi.....	12.84	1965	9.00	3.84
72	From 12 mi. north of junction with Hwy. 17 north- erly for 13 mi.....	13.00	1966	Nil	8.00
105	From junction with Hwy. 17 northerly for 8.19 mi.....	8.19	1965	7.24	.95
105	From 8.6 mi. north of junction with Hwy. 17 north- erly for 8.1 mi.....	8.10	1965	3.00	5.10
105	From 16.16 mi. north of junction with Hwy. 17 northerly for 9.55 mi.....	9.55	1965	.50	5.90
601	From 3.2 mi. north of junction with Hwy. 17 north- erly.....	0.50	1966	Nil	0.50
602	From 3 mi. west of Big Fork to 8 mi. west.....	5.00	1965	4.00	1.00
611	From junction of Hwy. 602 to end of road.....	13.90	1966	Nil	13.90
619	From 3 mi. north to 5 mi. north of village of Pine- wood.....	2.00	1966	Nil	2.00
	TOTALS.....	97.77		25.99	54.53

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11	From junction with Hwy. 602 at Emo, westerly to Barwick—length 7.25 mi.....	7.25	1965	Nil	7.25	380,463
11	From 34.06 mi. west of the Atikokan cut off westerly 38.69 mi.....	38.69	1966	Nil	6.00	31,617
71	From Nestor Falls southerly for 8.34 mi.....	8.34	1965	2.25	6.09	280,561
71	From 9 mi. south of Nestor Falls south- erly for 9.10 mi.....	9.10	1966	Nil	Nil	15,948
72	From the junction with Hwy. 17 north- erly for 12.84 mi.....	12.84	1965	2.05	10.79	224,686
72	From 12 mi. north of junction with Hwy. 17 northerly for 13 mi.....	13.00	1966	Nil	8.00	372,525
105	From junction with Hwy. 17 northerly for 8.19 mi.....	8.19	1965	3.27	4.92	295,029
105	From junction with Hwy. 17 northerly for 16.19 mi. including the Redvers and Ely Lake patrol yards.....	16.19	1966	Nil	Nil	21,241
105	From 8.6 mi. north of junction with Hwy. 17 northerly 8.1 mi.....	8.10	1965	1.46	6.64	360,873
105	From 16.16 mi. north of junction with Hwy. 17 northerly for 9.55 mi.....	9.55	1966	Nil	6.40	106,324
105	From 27.25 mi. south of Ear Falls southerly for 9.99 mi.....	9.99	1966	Nil	9.99	18,375
105	From 27.3 mi. south of Ear Falls south- erly for 10.05 mi.....	10.05	1965	9.55	.50	35,041
	TOTALS.....	151.29		18.58	66.58	2,142,683



## Granular Base Where No Grading Done

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
596	Town of Keewatin north limits to junction with Hwy. 641.....	8.40	1966	Nil	7.40	14,762
602	3 mi. west of Big Fork to 8 mi. west....	5.00	1965	4.00	1.00	6,789
602	From 7 mi. south of Emo to 4 mi. south.....	3.00	1966	Nil	3.00	29,519
602	Stockpile for Hwy. 602 located 4 mi. south of Emo.....	n/a	1966	Nil	n/a	19,704
642	From Superior Junction to Alcona.....	3.00	1966	Nil	3.00	5,835
	TOTALS.....	19.40		4.00	14.40	76,609

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
11	Nickel Lake patrol yard, 15 mi. east of the Town of Fort Frances	Four bay metal Patrol garage	Equipment storage	1966	1966
11	Village of Emo, 23 mi. west of the Town of Fort Frances.....	Standard salt shed	Salt storage	1966	1966
11	Village of Rainy River.....	Standard salt shed	Salt storage	1966	1966
11	Village of Rainy River.....	Standard salt shed	Equipment storage	1966	1966
17TC	Department of Highways Yard approximately 4 mi. east of Kenora	Standard salt shed	Salt storage	1965	1966
17TC	Department of Highways yard approximately 4 mi. east of Kenora (Department of Public Works)	Standard paint and carpenter shop		1966	1966
17TC	Town of Dryden.....	Standard salt shed	Salt storage	1966	1966
17TC	Four mi. east of village of Ignace at District 19 patrol yard.....	Standard salt shed	Salt storage	1966	1966
621	2 mi. north of village of Bergland.	Four bay metal patrol garage	Equipment storage	1966	1966

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL GALLONS	TOTAL TONS	TOTAL MILES
Bridges painted .....	1	—	—	—
Calcium dust layer on gravel roads.....	—	—	1,346	—
Calcium for de-icing roads .....	—	—	8	—
Development roads built (Dilke-Morley-Nelles Twps.) 4 mi. 1965, 3 mi. 1966.....	1	—	—	3
Off-road parks maintained .....	24	—	—	—
Roads snowploughed and kept open, King's highways	9	—	—	602.1
Roads snowploughed and kept open, secondary high- ways .....	23	—	—	363.6
Roadside picnic places maintained.....	7	—	—	—
Routine maintenance, King's highways.....	9	—	—	602.1
Routine maintenance, secondary highways.....	23	—	—	363.6
Salt for de-icing roads (raw).....	—	—	5,525	—
Salt in sand, stockpiled .....	—	—	1,903	—
Sand for winter maintenance .....	—	—	50,749	—
Scale houses maintained.....	5	—	—	—
Seeding by department's forces..... (acres)	130	—	—	—
Shrubs received and planted this year.....	306	—	—	—
Signs erected or replaced.....	1,531	—	—	—
Snow fence erected, dismantled, stored (21 patrols).....	—	—	—	16.02
Weed control.....	—	653	—	446
Sodium T.C.A. 6,405 pounds				
Weed Killer 653 gallons				
Zone painting on King's highways.....	—	6,829	—	442
Zone painting on secondary highways.....	—	279	—	7.5

## PERSONNEL BRANCH

**JAMES POGUE, Director**

The Personnel Branch administers recruitment and placement of staff, staff transfers and promotions, training, organization and classification, personnel records, staff establishment of branches, the departmental safety program and the Public Service Superannuation Act. It is the branch responsible for the administration of the Public Service Act and Regulations, within the Department.

The branch publishes a personnel manual, supplied to the supervisor of each major unit of organization, containing information on both Department of Civil Service and Department of Highways procedures. An accompanying manual, also published by the Personnel Branch, contains all published class specifications utilized by the Department.

These publications are augmented as the need arises by circulars, published over the signature of the Deputy Minister, detailing such matters as new salary rates, changes in personnel procedure or policies and other matters of related supervisory and employee interest. These circulars are widely distributed to both major and minor organizational units for display on bulletin boards, so that employees may be made aware of all new developments as soon as possible.

All employee grievances made under the Public Service Grievance Procedure are reported by supervisors to the Personnel Branch, to ensure that prompt action may be taken where necessary.

Should the grievance reach the stage of a hearing before the Public Service Grievance Board or before the Classification Rating Committee designated by the Chairman of the Civil Service Commission, the departmental viewpoint is presented by a member of the Personnel Branch staff.

## RECRUITMENT SECTION

During the period under review employment requirements continued at a high level although a slight decrease in vacancies in the Metro Toronto area was experienced. This was offset by a higher rate of vacancies with an increased hiring level throughout the rest of the Province.

In total 1,288 new employees were appointed to the Probationary Staff with 550 appointments processed by the Recruiting Office Downsview and 732 by District Offices. This compares with 642 in Downsview and 560 in District Offices during the prior year. Students for summer employment this fiscal year totalled 913 as compared to 856 last year.

46 transfers of which the greater number resulted in promotions, were effected by means of departmental competitions as compared with 11 last year.

Shortage of professional staff again necessitated recruiting in the United Kingdom where 15 engineers were hired and in addition interviews were conducted in Canadian Universities from Halifax to Vancouver where, in spite of the fact that Public Service salaries were generally competitive, only 10 graduates were hired due to continuing extreme competition in the Civil Engineering field.

## RECORDS SECTION

The Records Section is responsible for the proper documentation, recording and filing of all employee transactions and for ensuring that prescribed procedures are followed in all transactions.

The Section is also responsible for maintaining employee anniversary merit increase dates, from which eligibility for merit increases for all employees of the Department is determined. In addition to being responsible for maintaining these records on punched cards, this Section prepares Merit Increase lists for certification by the Deputy Minister, authorizing salary increases. It is also required to prepare lists for signature by the Deputy Minister for salary increases occasioned by Salary Schedule Amendments which have been authorized by Order-in-Council and published by the Department of Civil Service. It is responsible for the distribution and posting of class and salary changes which have been delegated to the Deputy Minister.

All terminations, superannuations and retirements are processed in this Section and a list of employees reaching their Quarter-Century anniversary is prepared each year. All inquiries concerning benefits under the Public Service Superannuation Act are referred to this Section, as are questions connected with attendance and vacation credits.

Each month a strength report is prepared showing the present staff in relation to the previous year. The position inventory for the entire Department is maintained by this Section, being documented on the personnel files and on punched cards. This amounted to approximately 23,608 transactions in addition to those mentioned below. A skills inventory for employees in certain classifications is maintained by this Section.

At the end of the fiscal year the Department's work force was 13,290 which was distributed as follows:

	1966-67	1965-66	1964-65
*Administration Branch.....	238	213	296
Financial Branch.....	308	307	291
Services Branch.....	1,225	1,188	1,160
Planning Branch.....	403	370	356
Design Branch.....	750	733	750
Operations Branch.....	10,161	10,363	10,148
Personnel Branch.....	52	62	55
**Legal Branch.....	27	24	24
**Electronics Branch.....	108	91	—
†Research Branch.....	18	13	—
TOTALS.....	13,290	13,364	13,080

\*Formerly known as Deputy Minister's and Administration Branch.

\*\*These figures were formerly included in Administration Branch.

†This figure was formerly included in Operations Branch.

The Total work force of 13,290 included salaried and hourly-rated personnel and is grouped as follows:

	1966-67	1965-66	1964-65
Regular and Probationary Staff.....	9,760	9,116	8,735
Unclassified Staff.....	747	1,034	733
Seasonal Unclassified Staff.....	2,783	3,214	—
*Hourly-rated Unclassified Staff.....	—	—	562
*Seasonal Staff (monthly and hourly).....	—	—	3,050
TOTALS.....	13,290	13,364	13,080

\*These figures are now included in Seasonal Unclassified Staff.



By occupation the employees are grouped as follows:

	1966-67	1965-66	1964-65
Clerical and Stenographers.....	2,131	2,148	2,055
Graduate Engineers.....	404	350	359
Engineers' Assistants.....	1,902	2,346	2,173
Draftsmen.....	657	618	611
Others.....	1,385	1,385	1,364
Equipment Operators.....	1,800	2,782	2,828
Automotive Mechanics and Foremen.....	429	458	457
Skilled Labour.....	553	631	585
Unskilled Labour.....	1,246	2,646	2,648
Seasonal Unclassified Staff.....	2,783	—	—
(not recorded by I.B.M.)			
TOTALS.....	13,290	13,364	13,080

During the year 40,204 personnel transactions were carried out by the Personnel Branch as follows:

New Appointments.....	1,514
Terminations.....	1,189
†Salary and Other Changes.....	37,501

†This figure includes general salary revisions to most classes used by the Department.

## ORGANIZATION AND CLASSIFICATION SECTION

This Section is responsible for the administration throughout the Department, of the classification and salary plan established by the Department of Civil Service. It is responsible for the development and administration of a similar departmental programme governing the unclassified employees.

It is also responsible for the programme of appointments to the regular staff of probationary and unclassified employees.

The Section also provides, through its regional and branch representatives, advice and guidance to both supervisors and employees on a wide range of matters, such as interpretation of the Public Service Act and Regulations and the provision of counselling to individual employees where their problems are of such a nature that their supervisors are unable to assist them.

The programme initiated under the Ontario Civil Service Reclassification Plan was continued, and the branch and regional personnel representatives continued to provide advice and guidance to supervisors in the field of position specification writing. The usual organizational changes, which occur in a department of this size, necessitated the review and re-writing of many position specifications and the re-drawing of a number of organization charts.

The personnel representatives also conducted desk audits of a number of positions, where the responsible supervisor or the incumbent of the position had expressed doubts concerning the correctness of the class to which the position had been assigned, in order to ensure that a factual description had been submitted to the Department of Civil Service for classification allocation.

In conjunction with the Department of Civil Service a review was continued of the duties performed by employees in the Engineer's Assistant class series and, as a result 9 new class series encompassing 39 new classifications have been established, the

positions of some 300 employees were re-classified and appropriate class and salary adjustments were processed.

Other classification series were amended by the Civil Service Commission during the period under review, such as Photogrammetrists, Inspectors of Signs and Buildings Permits, Technicians, Data Control and Traffic Analysts which necessitated the re-classification of a number of employees and the processing of a large number of salary revisions for employees in other classes for which new salary ranges were established.

Two separate salary revisions resulting from new salary ranges established through arbitration proceedings for over 9,000 employees were processed. In addition, salary revisions were processed for approximately 700 employees in management classifications.

Other re-organization within the Department brought the usual new or revised position specifications and organization charts in its train, necessitating the allocation or re-allocation of numerous positions to appropriate classes.

The usual large volume of merit increases in salary, promotions, demotions and other related transactions were processed.

TRAINING SECTION

This Section is responsible for establishing and administering a programme of training to maintain and improve the efficiency of Department operations.

Training courses were held at the Training Centre at Downsview during the fall and winter months when the reduced construction programme enabled employees to attend.

Courses were conducted as follows:

BRANCH	NUMBER OF COURSES		NUMBER OF CANDIDATES	
	1965-66	1966-67	1965-66	1966-67
Services.....	26	10	231	151
Operations.....	33	23	674	556
Planning.....	3	2	12	8
Design.....	8	14	74	151
Administration.....	3	0	35	0
Electronic Computing.....	5	0	59	0
Personnel.....	7	5	70	39
TOTALS.....	85	54	1,155	905

These courses provided instruction in a wide variety of Department activities such as: design surveying, land surveying, construction surveying, drafting, estimating, quality control, welding, property negotiations, surface treatment, geometric design, short-hand and position analysis. Eighty-two per cent of the candidates writing examinations in connection with these courses were successful.

In addition to courses, qualifying examinations were conducted as follows:

BRANCH	NUMBER OF EXAMINATIONS		NUMBER OF CANDIDATES	
	1965-66	1966-67	1965-66	1966-67
Services.....	9	11	148	194
Operations.....	7	9	397	496
Design.....	2	2	41	42
Administration.....	1	0	2	0
TOTALS.....	19	22	588	732

These examinations were written by employees to qualify for promotion to a variety of classifications such as: Mechanic 2, Draftsman 1 and 2, Technician 2, Survey, Highway Inspection Assistant 2, Landscape Crewman, Sign Painter Improver and Sign Painter Journeyman. Sixty-five per cent of the candidates were successful.

In addition to technical job training, a regular program of safety instruction is conducted by the Personnel Branch Safety Section. A total of 4,431 employees received safety instruction in the districts.

To assist the Municipalities of the Province in training their construction personnel, five courses were conducted by the Department, one on surveying and four on inspection. One hundred and fifty-five municipal employees attended these courses.

As intensive training courses for mechanics were no longer required, the visits of the Mobile Training Unit to the districts were discontinued. Two instructors now visit the district garages giving direction and instruction as required.

Three hundred and seventeen employees were assisted either financially or through the granting of leaves-of-absence to attend courses conducted by outside agencies. This type of training is approved when it is not feasible to provide the training by in-service means and it is considered essential or beneficial to the Department's operations that specific employees should acquire special skills or knowledge.

Two hundred and fifty-two employees took St. John Ambulance courses in the fundamentals of first aid and qualified for certificates.

A total of 6,637 employees participated in the various training activities conducted from April 1, 1966 to March 31, 1967.

## **DEPARTMENTAL COUNCIL SYSTEM**

The Departmental Council convened for nine meetings in the period from April 1, 1966 to March 31, 1967. Three of these meetings were held, for the first time, at Regional locations, i.e. North Bay, Fort William and London with approval being granted to hold a fourth meeting at the Eastern Region in Kingston. Attending these meetings, along with the Council members, were two representatives from each Branch Council, located within the Region, along with senior personnel from the Districts and the Regional Office.

A two-day Conference was held in April with the Chairmen, or delegate, from the twenty-eight Branch Councils in attendance. At this Conference government regulations and policies, salary rates, classifications, etc., were reviewed. The delegates to the Conference took a very active part in the meeting by the presentation of problems and matters pertinent to their respective District, Branch or Regional Office. General discussion was held on many other subjects of interest to the employees.

The annual election of employee representatives to the Departmental and Branch Councils was conducted in accordance with regulations made under the Public Service Act. The Minister of Highways selected and appointed his representatives to the Departmental and Branch Councils.

The interest shown by the Minister, Deputy Minister, Branch Heads and District Engineers in the Council System has made its operation a continuing success.



## SAFETY SECTION

The Safety Section, through the Director of Personnel, is responsible for the provision of safety training and accident prevention material to Department employees.

In a programme designed to further improve the Department's safety record, the policy of visiting districts or branches twice per year was continued. However, in order to ensure that the importance of safe work habits was brought to the attention of the largest possible number of employees, a greater number of meetings of shorter duration were conducted in each district or branch. This resulted in considerably increased coverage of Department staff.

As a result, it was possible to achieve a further increase of 1,010 in the number of employees receiving accident prevention instruction from 3,726 in 1965-66 to 4,736 in the year under review. Of this number, 3,740 attended safety meetings in their respective branches or districts, 305 attended courses at the Departmental training school at Downsview and a further 691 had direct contact with safety instruction officers during job site visits.

Amongst those receiving safety instruction were patrolmen, foremen, mechanics, equipment instructors, manual workers, equipment operators, survey inspection and other construction personnel as well as other groups of the regional and district staffs.

The programme of production and distribution of safety posters designed within the Department was continued, many of these being directed towards the elimination of accidents which experience had indicated would occur on a seasonal basis. Articles were also prepared for publication in the "D.H.O. News", the departmental employee publication.

In addition to the normal safety training provided to employees, a two-day course in the "Fundamentals of First Aid" was provided to 252 employees by the St. John Ambulance. Those qualifying received certificates of proficiency.

The usual annual Safe and Skilled Driving Competitions (Roadeo) were held with all districts participating, with prizes being awarded at a function held at the completion of the Roadeo.

1,610 equipment operators entered in the Ontario Safety League Safe Driver Award Programme received awards for the calendar year 1966-67, indicating a continuing improvement in safety consciousness on the part of our operators, the number of awards having risen from 741 in 1955.

The following tables summarize the Department's industrial and motor vehicle accident experience:

### *Industrial Accidents*

	FISCAL YEAR 1965-66	FISCAL YEAR 1966-67
Total hours worked.....	26,142,804	25,605,893
Number of lost time accidents.....	603	503
Days lost as result of accidents.....	35,247	50,002*
Frequency rate.....	23.04	19.64
Severity rate.....	741.70	1,952.75
Industrial injury costs.....	\$417,422.38	\$409,690.53

### *1966 Deaths:*

- Two men—struck by lightning.
- One man—performing mechanic duties (heart attack).
- Three men—involved in traffic accidents.



*1966 Amputations:*

Four men had the first joint of their finger severed.

- \* This figure includes 6,000 hours which is required to be charged for each fatality occurring during active employment. The total of 18,000 hours charged for the three fatalities listed presents a somewhat inaccurate measurement of time lost resulting from industrial accidents as these fatalities did not result from conditions associated with the work situation.

In any event, the reduction in the number of lost time accidents from 603 to 503 appears to indicate an increasing awareness on the part of employees of the desirability of observing safe working practices and procedures.

*Motor Vehicle Accidents*

	FISCAL YEAR 1965-66	FISCAL YEAR 1966-67
Responsible motor vehicle accidents.....	188	154
Miles travelled.....	35,898,037	38,163,103
Frequency rate per 100,000 miles of travel.....	0.52	0.40
Responsible hourly rated equipment accidents.....	20	17
Miles travelled.....	2,838,655	2,793,980
Frequency rate per 100,000 miles of travel.....	0.70	0.61
Total responsible accidents for both types of equipment.....	208	171

There has been a decrease in the frequency rate for mileage vehicles which had risen slightly from 0.47 in the year 1964-65 to 0.52 in the year 1965-66, falling to 0.40 in the year 1966-67.

Also, there has been a further reduction on hourly-rated equipment from 0.70 for each 100,000 miles travelled in 1965-66 to 0.61 for each 100,000 miles travelled in 1966-67.

## PLANNING BRANCH

W. BIDELE, P.Eng., Director of Planning

### TRAFFIC AND PLANNING STUDIES DIVISION

W. Q. Macnee, P.Eng., Traffic and Planning Studies Engineer

#### PLANNING STUDIES SECTION

Work carried out by the Planning Studies Section during the past fiscal year can be subdivided into three major categories—

- (a) Specific Highway Planning
- (b) Area Highway Planning
- (c) Urban Transportation Planning

#### (A) SPECIFIC HIGHWAY PLANNING

A review of the activities undertaken by this group in supplying traffic data for design is summarized as follows:—

NUMBER OF PROJECTS COMPLETED	REGION
29	Central
36	Southwestern
26	Eastern
16	Northern
<hr/> TOTAL 107 <hr/>	

In addition to the normal routine projects noted above the following special studies were undertaken.

- (a) Analysis of freeway sections under various design configurations using a new computerized procedure that was developed by this group.
- (b) Work has started on the development of a mathematical model to describe travel patterns in the Metropolitan Toronto Area.
- (c) Assisting in the testing of a new technique for assigning traffic to road networks.

#### (B) URBAN TRANSPORTATION PLANNING

The Planning Studies Section provides the liaison between the Department of Highways and the municipalities in the Province which have retained consultants to undertake urban and regional transportation studies.

Although the prime purpose of these urban transportation studies is to plan a road network which would alleviate the problems of traffic congestion, these studies include also other aspects of transportation such as parking, transit, traffic control, etc. Urban Transportation Studies usually include present and projected land use; origin-destination surveys; an analysis of the parking and transit requirements and a priority program of road construction, usually for a twenty year period.

Prior to the 1966-67 fiscal year, twenty-eight transportation studies had been completed.

During the 1966-67 fiscal year ten studies were completed; nine were continuing in various stages of completion and two new studies were started.



Plate No. 1

**FISCAL YEAR 1966-1967**

<u>COMPLETED</u>	<u>UNDERWAY</u>	<u>STARTED</u>
Brampton	Georgetown	Dundas
Burlington	Hawkesbury	Kenora
Galt	Port Colborne	
Leamington	St. Thomas	
London	Wasaga Beach	
Oakville	Chatham	
Midland	Guelph	
Preston	Kitchener-Waterloo	
Stratford	St. Catharines	
Welland		

**(C) AREA HIGHWAY PLANNING**

The program of Area Highway Planning initiated to identify the highway needs for a twenty year planning period is progressing satisfactorily. During the past year two more studies were completed with these being the Southwestern Ontario Highways Planning Study and the Toronto Area Highway Study-Western Section. This brings to five the total number of completed studies. Reports are now available for the Niagara Peninsula Planning Study, London Area Planning Study and the Eastern Ontario Highway Planning Study.

In addition ten studies are in progress with their status being as follows:

**(1) *Barrie-Simcoe County Highway Study***

This study is in the final stages of analyses and recommendations are being developed. Some original research was done in the development of several sets of equations relating trip generation to recreational land use for the study area. This work is now complete and multipath assignment techniques are being tested to predict future traffic flows on various proposals.

**(2) *Brantford Area Highway Planning Study***

This study is now nearing completion. Presentations are being held within the Department. Considerable information is already available from this study.

**(3) *Kitchener Area Highway Planning Study***

Since last year the design concept of this area study has changed to incorporate the internal trips in the large urban centres of Guelph, Kitchener-Waterloo and Galt-Preston. This area is now being considered as one large metropolitan region. With the assistance of Waterloo County Planning staff and other Provincial Government Departments, it is our intention to investigate different land use patterns that may develop or should be encouraged in future years.

**(4) *Kingston Area Highway Planning Study***

This study is now in the analysis stage. Assignments are being made to test networks and levels of service calculated. The Division presentation is expected by late summer.



(5) *Peterborough Area Highway Planning Study*

The 1965 and 1990 origin-destination tables for both summer weekday and weekend are complete. Assignments are being made to existing road and composite networks. The minimum time and minimum distance assignments for 1965 are being examined along with the existing road counts to check the reliability of the O-D table and classification speeds.

(6) *Lake Huron-Georgian Bay Highway Planning Study*

The origin-destination data has now been processed and O-D tables constructed for 1966 summer weekday and weekend conditions. It is expected that the land use data will be available very soon from the Community Planning Branch of the Department of Municipal Affairs so that expansion factors can be calculated and future origin-destination tables compiled.

(7) *Muskoka-Parry Sound Highway Planning Study*

The data for this study was collected in the summer of 1966. The processing stage is nearly complete and construction of the 1966 origin-destination table can proceed. It is expected that a new computer program will be available to help analyse the longer distance trips that have been interviewed at several screenlines throughout the study area.

(8) *Sudbury-North Bay*

This study is just starting with the design of the data collection system well underway. Field surveys will be conducted this summer and processed during the next fiscal year.

(9) *Woodstock Truck Route Study*

This is a specific study of truck routing around the City of Woodstock. A number of proposals are being tested and time and distance assignments examined. Recommendations are expected later this year.

(10) *Highway 17 Ottawa to North Bay*

This is a detailed corridor study which is now nearly complete. A report is expected later this year.

Location of the completed study areas as well as the location of the studies presently in progress are shown in plate No. 1, page 210.

During the year the Drafting Group has worked on all phases of report preparation from preliminary base maps to layout and assembly. In addition a number of large scale displays of exhibits were prepared for presentation of the study findings.

## TRAFFIC CONTROL SECTION

During the past fiscal year the Devices Group in Head Office completed the sign standards and patterns for GO Transit in addition to its normal duties.

The Permanent Counting Station renewal programme continued and by the end of the year approximately 50% of the stations had been rebuilt and re-equipped.

The Regional Offices completed the following traffic studies:

STUDIES COMPLETED	EASTERN	CENTRAL	NORTHERN	SOUTHWESTERN	TOTAL
Intersection.....	7	61	38	43	149
Speed Zoning.....	12	24	81	30	147
Sign Layouts.....	27	78	35	41	181
Signal.....	2	52	7	5	66
Illumination.....	50	13	5	11	79
Others.....	26	72	14	45	157
TOTAL.....	124	300	180	175	779

In addition, personnel of the Section attended 45 municipal meetings and 24 others, such as seminars, coroner's inquests, etc.

### CHARACTERISTICS SECTION

Characteristics Section completed 1,350 requests for traffic data during the year ending March 31st, 1967, consisting of 564 volume requests, 633 accident requests, 57 origin-destination requests and 96 speed requests. In addition, numerous incidental requests for traffic data were answered including many from private individuals and considerable amount of data were made available from the volume files to various firms of consulting engineers, planners, etc.

The number of Permanent Traffic Count Stations increased to 42 from 33 with the addition of four new stations, Batchawana—Highway 17, Beaverton—Highways 12 and 48, Longbow—Highway 71 and Shillington—Highway 101, plus five stations previously operated as semi-permanent stations, Barrie—Highway 400, Drumbo and Liverpool—Highway 401, Lakefield—Highway 28 and Midhurst—Highways 26 and 27. However, six stations Etobicoke, Gravenhurst, Humber, Kitchener Suburban, Kitchener Urban and St. Davids were not operating a full year due to technical difficulties and construction in the areas. Etobicoke is still out but the rest are back in operation. Kitchener Urban is now being counted on two one way streets, with the volume combined to give a two way total volume for the station.

Several more semi-permanent (part year) stations were operated throughout the province and more are planned for next year.

Seven permanent counting stations were installed within municipalities in co-operation with the Department of Transport (two each in Simcoe, Smiths Falls and Niagara Falls and one in Gravenhurst) and two more are planned for next year in Sault Ste. Marie and Port Arthur.

Routine traffic counts throughout the province continued to be obtained by contract, including counts at service centre ramps. These counts were supplemented by summer weekend counts in many areas by the Department, and the twice yearly routine vehicle classification counts obtained by District Maintenance Patrols continued.

Toward the end of the fiscal year (the beginning of the calendar year 1967) a computer program was introduced whereby all permanent count station information would be entered on magnetic tape with the provision for up-dating or correcting the original information later if needed before each monthly ADT and monthly report was extracted. At the end of the calendar year the computer would produce the AADT for each station and its seasonal variation factors, plus the Annual Permanent Count Stations Report.

Accident data on Highways and Secondary Highways continued to be punched onto cards, with the annual summary of these data being produced by the computer as was done last year. Data concerning "non-reportable" accidents continued to be received and entered on punched cards. Standard accident experience listings continued to be for three years plus the current year. The revision and relisting of key points incorporating the key point code to facilitate punched card operation continued.

Some 228,000 odd O-D interviews were coded and checked during the year. About 155,500 from approximately 169 stations operated this year, with a further 72,500 being recoded from previous surveys for current use, and a complete check and correction prior to linking of approximately 31,700 trips obtained in three telephone surveys conducted by Consultants was made. In addition there were 30 odd special assignments such as plotting, building O-D tables, etc., for use in Planning Studies Section.

In conclusion the various routine traffic characteristics reports were published as usual throughout the year.

## HIGHWAY SAFETY

During the 1966 calendar year, Ontario had a registration of 2,637,266 motor vehicles, an increase of 126,426 or 5% over the previous year. They were driven on 86,000 miles of highways, roads and streets by more than 2,900,000 drivers of varying degrees of skill and judgement. These motorists in 1966, drove an estimated 23 billion, 700 million vehicle miles, an increase of 6.2% as compared to the 1965 mileage.

Approximately 11 billion miles were recorded in 1966 by motorists travelling the King's Highway System, about 46% of the total mileage driven in the Province. Travel on 700 miles of controlled-access highways; the Queen Elizabeth Way, 400-402, etc., accounted for 17% of the Provincial total.

In 1966, Ontario had 139,781 accidents reported by the police, to the Department of Transport, an increase of 11,319 or 8.8% over the 128,462 recorded in the previous year. Single vehicle type accidents totalled 29,206 or 20.9% of the Provincial total. Accidents on the King's Highways accounted for 19.8% of the 139,781 reported, as compared to 21.1% for 1965. More than 65,000 persons suffered injuries in the 139,781 reportable accidents, while the estimated property loss was approximately \$72,950,000.

Fatal accidents in the Province showed an increase of 29 or 2.2% over 1965, but, the number of deaths decreased by 15 or 0.9%. In 1966, the 1,347 fatal accidents resulted in 1,596 deaths, while the 1,318 fatal accidents in 1965 accounted for 1,611 deaths. The total fatalities for highways only, increased from 596 to 604 in 1966.

In all Canada, in 1966, traffic accidents killed 5,258 persons, an increase of 7.3% over the 1965 total of 4,902 dead. Ontario's total (1,596) accounted for 30.2% while about one-third of the fatalities occurred in Quebec, where the 1966 total of 1,727 was an increase of 186 deaths over the 1,541 total, for 1965.

The United States, in 1966, had an all time high of 53,000 persons killed in traffic accidents, an increase of 7% above that of 1965, when 49,163 were killed. The States had a motor vehicle registration of 94,176,799, a gain of 3,816,078 over 1965.

The King's Highway System, exclusive of Secondary Highways, recorded 766 deaths as a result of 604 fatal accidents. There was evidence of drinking in 36.3% of these accidents. Single vehicle type fatal accidents accounted for 30.6% of the highways total.



Drinking drivers were involved in 46.5% of the 189 fatal accidents, which resulted when the vehicle went off the roadway or struck a fixed object, on the King's Highways.

Pedestrian accidents resulted in 113 deaths or 14.8% of the total (766) persons killed on highways. In 32.7% of these accidents, the pedestrian "had been drinking".

In 1966, the accident rate for all Ontario was 5.9 based on the number of reportable accidents for every one million vehicle miles of travel. The rate for the King's Highway System, exclusive of Secondary Highways, was 2.6 while the controlled-access highways had an accident rate of 1.6, a slight decrease from 1.8 in 1965 and 1.7 in 1964. The accident rate for Secondary Highways was 3.7.

The Provincial fatal accident rate in 1966, for all highways, roads and streets was 5.7; the number of fatal accidents per 100 million vehicle miles of travel. The rate for the King's Highways was 5.6, the lowest ever recorded.

The 700 miles of controlled-access highways had a 2.6 fatal accident rate. There was evidence of drinking in 41.5% of the accidents resulting in deaths. Forty-one percent (41.3%) of the fatal accidents, involved one vehicle only while pedestrian deaths accounted for 21.8% of the total, reported for access highways.

The mileage fatality or death rate for Ontario in 1966 was 6.7 (deaths per 100 million vehicle miles of travel) as compared to a slightly higher rate of 7.0 for the King's Highway System exclusive of Secondary Highways, which had an exceptionally low rate of 4.9. The Province's controlled-access highways had a death rate of 3.0 while the United States had an aggregate death rate of 2.8 for all turnpikes, thruways, etc. The estimated average in the States, was 5.7 for all highways, roads and streets.

During the fiscal year 1966-67 the Office of the Supervising Coroner for Ontario forwarded seventy-nine Coroner's Inquest Reports to the Traffic and Planning Studies Division where recommendations were made by juries that the Department carry out certain improvements where fatal accidents have occurred on King's Highways. The findings and recommendations were given every consideration, and reports prepared by our Regional and District engineers, etc.

Traffic Seminars were conducted throughout the Province in co-operation with the Ontario Provincial Police. These meetings have been very informative and of particular value to our Regional and District officials. Informal discussions with several hundred members of the O.P.P. and Municipal Police departments have resulted in many studies being carried out on the King's Highways, at locations considered accident prone or where certain driving hazards exist.

Motor vehicle accident statistics were compiled for presentation as highway safety evidence at Ontario Municipal Board Hearings, in the matter of applications by the Minister for approval of the closing of certain roads intersecting controlled-access highways.

The Department continued to provide every co-operation to all concerned with highway safety. Three years ago, the Ontario Provincial Police started aircraft-patrol of highways in the Toronto and Sudbury areas to assist in the apprehension of speeders and other traffic law violators. In 1966, the Department marked additional highways in the St. Thomas, London, Sarnia, Barrie, Peterborough, Pembroke and Ottawa areas to enable the police to increase this type of enforcement. Traffic accident statistics were compiled for the selection of sections of highways having a high frequency of accidents, resulting from speeds and other traffic violations. The operational administration of



this program comes under the direct command of the O.P.P. Traffic Division. The Department of Highways co-operated by measuring and marking those sections of highways, having a high accident rate.

## FUNCTIONAL PLANNING DIVISION

**I. C. Campbell, P.Eng., Functional Planning Engineer**

The work load of this Division continued to increase during the period from April 1st, 1966 to March 31st, 1967 as indicated on the following table:

WORK LOAD	1965-66	1966-67
Functional reports completed.....	35	66
Functional reports reviewed.....	50	62
Functional reports in progress.....	124	156
Grading work projects issued.....	87	101
Structure projects completed.....	124	167
Interchanges completed (Regions).....	25	38
Channelization completed (Regions).....	49	88

A notable increase in the number of complex freeway designs, both Urban and Rural was particularly noticeable as the following examples would indicate.

- Q.E.W. from Hamilton to Niagara Falls and Fort Erie.
- Highway 27 from the Q.E.W. to Dixon Road (including the 401 interchange and the Belfield Expressway).
- C.A.H. 402 from Sarnia to London (in progress).
- North Bay By-pass.
- Freeway concept from Ottawa to North Bay (in progress).
- C.A.H. 417 from Ottawa to Montreal (in progress).
- Ottawa Queensway Extension westerly from Richmond Road.

From the administrative approach, a new training program for the Draftsman-Designer was initiated and is expected to contribute greatly to the future efficiency of the Functional Planning Division.

A detailed account of the work processed by the four Regions and the Head Office Section follows.

## HEAD OFFICE FUNCTIONAL PLANNING SECTION

**P. J. Harvey, P.Eng., Functional Planning Review Engineer**

This Section of the Functional Planning Division has three main functions. It is responsible for reviewing the work of the four Regions, it prepares design drawings of all channelizations and interchanges and it records and reviews subdivision plans affecting the Planning Branch.

Secondary functions include the formation of the design standards for the Division, the preparation of design manuals and research projects, and administrative duties such as training, personnel administration, etc.

A summary of the work processed by the Head Office Functional Planning Division and compared with the previous year is shown in the following tables:

## HEAD OFFICE FUNCTIONAL PLANNING

	PROJECT GROUPS (2)	
	1965-66	1966-67
Functional reports issued by Division.....	35	66
Functional reports issued by Head Office.....	—	2
Functional reports reviewed.....	50	62
Functional reports in progress.....	—	1
Preliminary reports reviewed.....	74	76
Miscellaneous reports prepared.....	29	4
Work projects prepared (structure).....	—	3
Work projects reviewed.....	201	113
Work projects in progress.....	—	8
Miscellaneous projects prepared/reviewed.....	102	210
Design criteria prepared.....	3	3
Design criteria reviewed.....	201	233
Design criteria revised.....	53	79
Assumption, designations, C.A.H., transfers, closings, revocations.....	118	84
Consultant and Municipal Agreements.....	22	19
Permit applications reviewed.....	210	71*
Property sales reviewed.....	109	9*
Terms of reference for feasibility studies.....	—	3
Miscellaneous assignments prepared.....	—	13

## INTERSECTION DESIGN GROUP

Interchanges.....	42	35
Channelizations.....	82	73
Truck climbing lanes.....	1	—
Minor intersections.....	17	20
Service centres.....	8	6
Miscellaneous projects.....	50	43
Standards.....	4	4
Work project review.....	—	14
Contract review (work projects).....	173	297

## RIGHT OF WAY GROUP

Property requests completed and reviewed.....	600	—*
Property requests initiated or approved.....	65	—*
Property sales.....	200	—*
Plans of subdivision plotted.....	660	675
Plans of subdivision reviewed.....	235	195
Exemptions from subdivision control.....	500	480
Official plans.....	10	15
Amendments to official plans.....	100	60
Road openings/closings.....	—	60
General Inquiries.....	—	100

\*Responsibility of individual Region 1966-1967.

## CENTRAL REGION—FUNCTIONAL PLANNING SECTION

R. G. Burnfield, P.Eng., Regional Functional Planning Engineer

The following are completed projects during the year which are worthy of special note:

The Q.E.W. Extension in the City of Niagara Falls. This report was prepared by the De Leuw Cather & Co. Consultant Firm and published by the Technical Committee.

The Q.E.W. Functional Planning Reports—Hamilton to St. Catharines and C.A.H. 405 to Fort Erie, approximately 47 miles of proposed improvements.

Highway 3 from Port Colborne west to Nelles Corners (length 35 miles). This was the first aerial alignment Functional Planning Report.

The issuing of the plan and profile for improvement to existing and new alignment of Highway 27 from the Q.E.W. to Dixon Road, including Highway 401 and the Bel-field Expressway.

A concept study of a reversible lane system for Highway 400 from Finch Avenue to the City of Barrie.

The following are Functional Planning Reports prepared by Consultants:

1. The Q.E.W. Highway from Hamilton to St. Catharines. 23 miles of Freeway plus service roads. Prepared by the De Leuw Cather & Co. Consultant Firm.
2. The Q.E.W. Highway from C.A.H. 405 to the Welland River. 8.6 miles of Freeway prepared by the Damas & Smith Consultant Firm.
3. The Q.E.W. Highway from the Welland River to Fort Erie. 14.7 miles of improvement, plus new interchanges and grade separating all intersecting roads. Prepared by C. C. Parker & Associates Consultant Firm.
4. Highway 3 from 4.3 miles west of Port Colborne to 2 miles west of Nelles Corners, a distance of 33 miles of mainly new alignment prepared by the Foundation of Canada Engineering Corporation.
5. Highway 8, from Winona Road easterly to Grimsby. 4.7 miles of reconstruction and new alignment prepared by the McCormick & Rankin Consultant Firm.

The following table is a summary of work carried out during 1966-1967, including work by Consultants.

TYPE OF WORK	DISTRICT 4		DISTRICT 6		DISTRICT 7		TOTAL	
	65/66	66/67	65/66	66/67	65/66	66/67	65/66	66/67
FUNCTIONAL REPORTS								
Completed.....	3	10	2	3	2	—	7	13
In Progress.....	14	26	6	21	7	11	27	58
GRADING WORK PROJECTS								
Completed.....	12	33	7	3	8	13	27	49
In Progress.....	37	31	19	5	11	2	67	38
RESURFACING AND PAVING WORK PROJECTS								
Completed.....	2	10	1	3	6	2	9	15
In Progress.....	8	6	1	4	13	3	22	13
INTERCHANGES								
Completed.....	6	22	11	7	—	—	17	29
In Progress.....	22	23	13	62	3	—	38	85
STRUCTURES								
Completed.....	14	73	36	20	6	7	56	100
In Progress.....	50	101	57	208	11	9	118	318
CHANNELIZATIONS								
Completed.....	4	27	3	15	2	3	9	45
In Progress.....	1	60	2	39	3	3	6	102

## NON WORK PROJECTS

Completed.....	13	4	22	12	5	3	40	19
In Progress.....	2	1	6	8	11	1	19	10

## SPECIAL STUDIES

Completed.....	4	3	9	3	—	—	13	6
In Progress.....	3	1	2	2	1	—	6	3

## BOARD OF TRANSPORT COMMISSION

Completed.....	9	12	6	4	4	3	19	19
In Progress.....	8	1	1	1	6	6	15	8

OTHER (MUNICIPAL).....	—	94	—	70	—	—	—	164
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	65/66	66/67
PROPERTY SALES.....	200	227
PROPERTY REQUESTS.....	43	104
APPLICATIONS FOR PERMITS.....	626	655
C.A.H. CRITERIA.....	15	10
ASSUMPTIONS AND DESIGNATIONS.....	18	20
TRANSFERS.....	4	1
CLOSINGS.....	5	4
REVOCATIONS.....	—	6
SUBDIVISIONS.....	338	319
O.M.B. HEARINGS (Correspondence and Attendance).....	—	5

## SOUTHWESTERN REGION—FUNCTIONAL PLANNING SECTION

R. G. Gascoyne, P.Eng., Regional Functional Planning Engineer

Of the various projects considered in the Southwestern Region during the past year, the following are worthy of special note:

—New Highway 40, from Highway 80 southerly to existing Highway 40 west of Wallaceburg.

—Highway 4, from junction Highway 7 (Elginfield) northwesterly 5.2 miles including the structure over the Little Ausable River.

—Highway 4—Priceville easterly 1.8 miles.

Functional Planning Reports Completed by Consultants

—Highway 24—Simcoe-Port Dover.

—St. Marys By-pass west to Elginfield.

—Orangeville Diversion.

A summarized account of the total work is as follows:

	DISTRICT 1		DISTRICT 2		DISTRICT 3		DISTRICT 5		TOTAL	
TYPE OF WORK	65/66	66/67	65/66	66/67	65/66	66/67	65/66	66/67	65/66	66/67
FUNCTIONAL REPORTS										
Completed.....	1	—	1	7	1	5	5	4	8	16
In Progress.....	5	9	15	11	10	6	12	6	42	32
GRADING WORK PROJECTS										
Completed.....	1	2	1	1	4	—	8	1	14	4
In Progress.....	1	—	1	—	12	3	14	4	28	7
RESURFACING AND PAVING WORK PROJECTS										
Completed.....	4	4	3	2	3	5	7	7	17	18
In Progress.....	1	—	1	7	3	2	3	—	8	9



INTERCHANGES										
Completed.....	1	—	4	1	—	—	—	—	5	1
In Progress.....	—	—	4	10	1	3	7	5	12	18
STRUCTURES										
Completed.....	12	3	12	5	3	6	6	6	33	20
In Progress.....	1	13	19	36	4	3	11	11	35	63
CHANNELIZATIONS										
Completed.....	4	1	4	2	3	14	4	2	15	19
In Progress.....	1	13	1	—	13	10	5	10	20	33
NON WORK PROJECTS										
Completed.....	4	2	2	4	2	—	4	7	12	13
In Progress.....	1	1	—	4	3	4	2	3	6	12
SPECIAL STUDIES										
Completed.....	—	—	—	—	—	—	—	—	—	—
In Progress.....	—	—	—	—	—	—	1	—	1	—
BOARD OF TRANSPORT COMMISSION										
Completed.....	—	—	5	2	1	4	3	—	9	6
In Progress.....	2	4	8	8	4	6	2	—	16	18
OTHER (MUNICIPAL)										
							65/66		66/67	
PROPERTY SALES.....							21		39	
PROPERTY REQUESTS.....							50		56	
APPLICATIONS FOR PERMITS.....							179		162	
C.A.H. CRITERIA.....							7		4	
ASSUMPTIONS AND DESIGNATIONS.....							12		8	
TRANSFERS.....							5		4	
CLOSINGS.....							1		1	
REVOCATIONS.....							1		—	
SUBDIVISIONS.....							151		195	

## NORTHERN REGION—FUNCTIONAL PLANNING SECTION

**P. D. Billings, P.Eng., Regional Functional Planning Engineer**

During the 1966-67 fiscal year the following projects worthy of note were completed.

All projects on the new Sudbury-Timmins highway were completed by Planning.

The North Bay to Chalk River section of Highway 17 was completed by Planning for the present two lane highway.

A planning report for stage construction of a future North Bay By-pass was completed.

The planning was completed for Highway 35 between Dwight and the Victoria County Line with the exception of a short section north of Minden.

The following Functional Planning Reports were completed by Consultants:

Highway 17—Copper Cliff to junction Highway 536.

Highway 535—North of Noelville northerly.

Highway 17—Deux Rivières westerly.

North Bay By-pass Planning Report.

Highway 66—Chaput Hughes and Swastika.

Highway 35—Minden southerly.

Highway 35—Dorset northerly.

A summarized account of the various works completed and in progress is as follows:

	DISTRICT 11		DISTRICT 13		DISTRICT 14		DISTRICT 17		TOTAL	
TYPE OF WORK	65/66	66/67	65/66	66/67	65/66	66/67	65/66	66/67	65/66	66/67
FUNCTIONAL REPORTS										
Completed.....	3	4	4	7	1	2	5	3	13	16
In Progress.....	4	15	4	2	1	3	2	4	11	24
GRADING WORK PROJECTS										
Completed.....	6	9	14	11	6	7	10	7	36	34
In Progress.....	7	16	6	3	7	4	4	5	24	28
RESURFACING AND PAVING WORK PROJECTS										
Completed.....	1	4	1	3	—	3	6	7	8	17
In Progress.....	—	9	—	7	—	5	—	2	—	23
INTERCHANGES										
Completed.....	—	—	—	—	—	—	—	—	—	—
In Progress.....	—	—	3	—	—	—	—	—	3	—
STRUCTURES										
Completed.....	1	3	4	5	1	3	3	6	9	17
In Progress.....	4	8	8	2	3	1	6	2	21	13
CHANNELIZATIONS										
Completed.....	5	2	5	5	2	2	7	3	19	12
In Progress.....	—	5	8	3	1	—	2	3	11	11
NON WORK PROJECTS										
Completed.....	6	5	8	3	3	2	10	4	27	14
In Progress.....	1	2	1	6	—	3	2	4	4	15
SPECIAL STUDIES										
Completed.....	—	—	—	—	—	—	—	—	—	—
In Progress.....	—	1	—	—	—	—	—	—	—	1
BOARD OF TRANSPORT COMMISSION										
Completed.....	—	3	—	5	—	—	2	9	2	17
In Progress.....	1	4	4	2	—	—	3	5	8	11
OTHER (MUNICIPAL).....										
	—	—	—	—	—	—	—	—	—	—
							65/66	66/67		
PROPERTY SALES.....							108	94		
PROPERTY REQUESTS.....							81	65		
APPLICATIONS FOR PERMITS.....							269	319		
C.A.H. CRITERIA.....							35	2		
ASSUMPTIONS AND DESIGNATIONS.....							14	25		
TRANSFERS.....							9	13		
CLOSINGS.....							9	21		
REVOCATIONS.....							—	2		
SUBDIVISIONS.....							31	44		

#### EASTERN REGION—FUNCTIONAL PLANNING SECTION

J. L. Forster, P.Eng., Regional Functional Planning Engineer

The work out-put of this Region was considerably increased this year over last year. A total of 19 Functional Reports were issued during the fiscal year as well as 14 grading work projects.

The report on the Ottawa Queensway Extension westerly from Richmond Road (Highway 7 and 15) was one of the major reports. This particular report was complicated since not only did it require considerable additional work in dealing with the National Capital Commission whose lands this freeway will cross, but in addition there were soil and topographical problems which made the selection of the final scheme difficult.

Also worthy of note was the completion of the special report done on the possible future extension of Sir John A. Macdonald Boulevard northerly to Highway 401 in the City of Kingston.

Work continued on the proposed Highway 417 from Ottawa to the Quebec Border with the completion of an approved alignment for the ten mile section just east of Ottawa. Preliminary work was also well under way on the proposed Ottawa to Highway 401 freeway.

Approval in principle of the freeway concept for the North Bay to Ottawa Corridor has resulted in commencement of a major project by this Region from Ottawa to Haley Station.

The following Functional Planning Reports were completed by Consultants under the direction of the Regional Office in Kingston.

Highway 41—8.2 miles north of Cloyne 5.0 miles.

Highway 33—Trenton to Frankford.

Highway 41—Denbigh northerly.

Highway 38—Highway 7 southerly to Tichborne.

Highway 38—0.6 miles north of Hartington to Verona.

Highway 401—Sir John A. Macdonald Boulevard, Kingston.

Highway 62—Purdy to Maple Leaf.

The following table is a summary of the jobs completed and in progress:

TYPE OF WORK	DISTRICT 8		DISTRICT 9		DISTRICT 10		TOTAL	
	65/66	66/67	65/66	66/67	65/66	66/67	65/66	66/67
FUNCTIONAL REPORTS								
Completed.....	3	7	2	4	3	8	8	19
In Progress.....	14	14	16	17	14	10	44	41
GRADING WORK PROJECTS								
Completed.....	3	4	5	4	2	6	10	14
In Progress.....	1	—	1	6	7	14	9	20
RESURFACING AND PAVING WORK PROJECTS								
Completed.....	2	2	3	2	1	2	6	6
In Progress.....	3	—	3	—	2	—	8	—
INTERCHANGES								
Completed.....	2	2	1	5	—	—	3	7
In Progress.....	2	4	7	20	—	—	9	24
STRUCTURES								
Completed.....	5	11	7	9	4	7	16	27
In Progress.....	10	31	22	64	7	8	39	103

CHANNELIZATIONS								
Completed.....	2	7	4	4	—	1	6	12
In Progress.....	3	6	10	15	1	2	14	23
NON WORK PROJECTS								
Completed.....	5	3	—	1	8	—	13	4
In Progress.....	4	2	5	2	2	2	11	6
SPECIAL STUDIES								
Completed.....	—	—	—	—	—	—	—	—
In Progress.....	1	5	4	3	—	—	5	8
BOARD OF TRANSPORT COMMISSION								
Completed.....	3	4	5	1	—	3	8	8
In Progress.....	2	7	3	3	1	1	6	11
OTHER (MUNICIPAL).....								
					65/66		66/67	
PROPERTY SALES.....					97		52	
PROPERTY REQUESTS.....					45		34	
APPLICATIONS FOR PERMITS.....					135		192	
C.A.H. CRITERIA.....					1		3	
ASSUMPTIONS AND DESIGNATIONS.....					10		9	
TRANSFERS.....					5		3	
CLOSINGS.....					12		2	
REVOCATIONS.....					1		—	
SUBDIVISIONS.....					45		37	

THE PROGRAM DIVISION

W. G. Wigle, P.Eng., Program Engineer

The Primary purpose of the Program Division is to schedule the construction so that the Ontario Provincial Highway Network is continuously rehabilitated and augmented to accommodate the growing needs for road traffic facilities. To carry out the various aspects of its purpose, the Division is organized in 4 sections, with individual duties as follows:

ADVANCE PROGRAM SECTION

The function of this Section is to prepare, review, revise and continuously up-date current and future highway construction programs.

Inventories of road sections, structure and railway level crossings contained in the Provincial system are maintained. Information obtained periodically from various sources is compiled, analysed and documented so as to present a digest of existing structural, geometric and functional conditions throughout the entire system.

The above data, together with additional first-hand information from District and Regional offices, provide a basis for programming remedial work projects. Program Justification Reports are prepared to identify deficiencies, to recommend type, extent and priority of required remedial work, to set up feasible individual and grouped work projects, to provide program value estimates. Many such reports are based on the recommendations of Area Planning Studies, and may deal with construction of proposed new facilities as well as the rehabilitation of deficient existing road sections and structures.

As a recent policy innovation, the reports replace the preliminary planning reports



formerly prepared by the Functional Planning Division. During 1966, a total of 570 new work projects were so processed.

For the most part, advance programs are prepared for the ensuing 5-year period. However, some projects which do not have much immediate priority, but which must be kept in mind, may be programmed for the 6-10 year period, or even as EX projects with no specific priority. The advance program includes approximately 2,300 separate projects.

Existing programs are continually in a state of flux. For any of several reasons, many projects must be advanced or deferred from one fiscal year to another. For example, in 1966-67, more than 100 projects were added to the current program. During the same period about 50 projects were deleted and deferred to future programs.

As is usual, the "1967-68 Capital Construction Book" was prepared for distribution to the Legislature and news media at the time of budget presentation. Many requests for information about current, proposed or possible construction were received from senior D.H.O. officials, other Departments, Members of the Legislature, Municipal Councils, Chambers of Commerce, etc. Special reports, with maps and graphs to illustrate where necessary, were prepared in answer to these requests.

Monthly reports on the Status of the 1966-67 Capital Construction Program were prepared for circulation within the Department.

#### **URBAN PROGRAM SECTION**

This Section deals with road construction carried out by Urban Municipalities on facilities closely connected with the Provincial network. The work falls into two main categories, Connecting Links under normal agreements, Urban Expressways under special agreements.

Each work project is followed through from initiation to construction. Study and approval is given to the original proposal, the functional design, the construction design and cost estimates. At any stage, the personnel of this Section may recommend revisions to bring the work into line with Departmental policies and standards. Close liaison with Municipal officials and Consultants is involved.

During the 1966-67 fiscal year, 118 connecting link and 8 expressway projects were processed, fully or in part.

#### **SCHEDULING SECTION**

The work of this Section falls into two main categories. The schedule for pre-contract engineering of all programmed work projects is arranged and maintained. Expeditors carry out liaison with the various Sections involved in pre-engineering, to ensure that all phases are carried out in a feasible sequence and completed in time to meet each successive stage up to contract award. As construction programs are revised and augmented, Schedules of Pre-engineering are prepared and circulated to the various Departmental offices concerned with the pre-engineering process.

In its other important aspect, this Section arranges and continuously adjusts the current award schedule to control expenditure within the framework of available funds. Advancement or deferment of an award has the effect of increasing or decreasing expenditure for the current year on the project so manipulated.

In order to co-ordinate the information required in the scheduling process, increasing use is being made of the facilities of the Electronic Computing Centre. As a result, it has been found convenient to use the services of this Section in arranging electronic data processing for the entire Program Division.

## SPECIAL STUDIES SECTION

This Section carries out statistical and economic studies to provide a broad basis for planning future development of the Provincial Highway Network. Data in all of the many areas which may in some way relate to travel needs are assembled, processed and presented in such a way that future needs may be readily identified.

Current highway statutes, Departmental policies and internal regulations are evaluated comprehensively in their relation to principles and practices of highway planning and development. Each year this Section deals with numerous requests, from within and outside the Department, for road travel and associated statistical facts and forecasts.

During 1966-67, further progress was made on a comprehensive study of Controlled Access policies and warrants. In addition several other lesser studies were carried out at the request of senior officials of the Department.

## NORTHWESTERN REGION

H. A. Mantle, P.Eng., Asst. Planning Engineer (Northwest)

W. G. Sawyer, P.Eng., Regional Functional Planning Engineer

The Northwestern Region, situated in Port Arthur, is responsible for the functional planning work, engineering surveys and traffic studies in Algoma, Cochrane, New Liskeard, Sudbury, Kenora and Thunder Bay District.

The following table is a summary of the work completed and in progress:

	COCHRANE	SAULT STE. MARIE	FORT WILLIAM	KENORA
GRADING WORK PROJECTS				
Completed.....	—	3	8	4
CHANNELIZATIONS				
Completed.....	—	6	6	2
STRUCTURE PROJECTS				
Completed.....	1	3	5	1
ENGINEERING SURVEYS				
Planning Mileage.....	0.7	24.3	54.0	42.0
Survey Mileage.....	11.5	40.4	90.0	38.8
BRIDGE SITES				
(1) Plans.....	1	3	6	1
(2) Surveys.....	1	3	6	1
RAILWAY CROSSING SURVEYS				
(1) Plans.....	—	1	5	—
(2) Surveys.....	—	1	5	—
MISCELLANEOUS				
(1) Plans.....	2	2	3	5
(2) Surveys.....	2	2	3	5
CROSS SECTIONS				
Plotted.....	—	1.0	14.4	13.0
Field.....	0.5	2.0	72.1	35.8

## RESEARCH BRANCH

**M. D. ARMSTRONG, P. Eng., Director of Research**

Several of the research projects described in the Annual Report for 1965-66 were of a long-term nature and the efforts of the staff of the Research Branch have been mainly devoted to continuation of these studies. Further information is now provided on these projects and brief descriptions of some new studies are included.

The senior members of the staff have been in great demand as speakers at technical meetings and conferences and as members of the technical committees of various bodies both in Canada and the U.S.A.

The editorial staff has had an excellent year; in addition to editing and publishing research reports originating in the Branch, reports on projects completed at the Universities under the Joint Highway Research Programme have also been published and assistance has been given in the preparation of papers to be given at a number of meetings.

### ROAD BASES EXPERIMENT

Measurements and observations are continuing on the thirty-four test sections on Highway 10 north of Brampton, and a summary of the results of some of the measurements is presented in the accompanying diagram.

Benkelman beam rebound measurements have shown that full-depth asphalt concrete bases are stronger throughout the year if they are laid directly on the sub-grade soil, than they are when laid on a granular sub-base. The beam results indicate that the relative strengths of the various bases differ considerably, but it is too early to say that these differences in strengths will necessarily be reflected in corresponding differences in service behaviour under traffic.

The development of permanent deformation in the wheel tracks is used as a measure of performance under traffic, and the full-depth asphalt concrete bases placed directly on the subgrade have shown excellent resistance to permanent deformation.

### USE OF RUST INHIBITORS IN ROAD SALT

The study of the effectiveness of different types of rust inhibitors in limiting corrosion of auto-body steel was completed in May, 1967.

The analysis of results is now under-way and it is expected that the final report will be available in November, 1967. The report will present the results of the tests of three inhibitors carried out in special rotary traffic simulators at Downsview, tests on steel specimens exposed to normal road conditions at five places in Ontario and at centres in three other provinces, as well as the results of tests of corrosion due to atmospheric exposure only, carried out at all of the centres where the normal road exposure was tested.

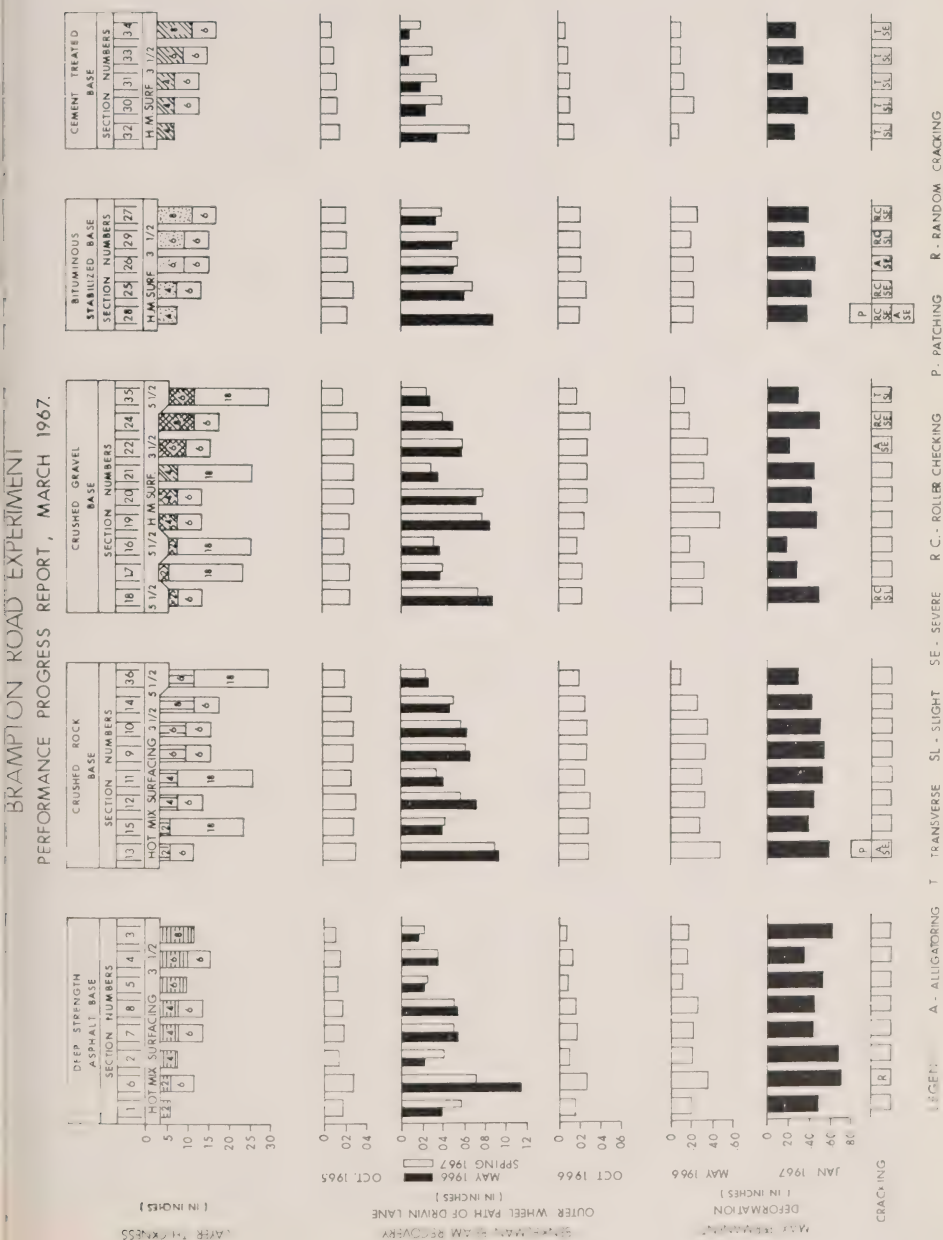
### TRANSVERSE CRACKING OF BITUMINOUS PAVEMENTS

An extensive programme of crack surveys and pavement investigations was undertaken during the period under review. The main (tentative) result of this work to date is that the frequency of cracking is highest on those pavements with surfacings made with penetration grade asphalt cements with low viscosity at 275°F.

Plans are now under way to investigate the low-temperature characteristics of the various asphalt cements used by the Department in the post-war years to see if any

RESEARCH IN HIGHWAY TRAFFIC

Several traffic planning studies are continuing. The first is directed toward developing methods of estimating average daily traffic volumes and design hourly traffic volumes from periodic short period counts. A continuing pilot study is an examination of the





most effective sampling procedures and rates for roadside-interview origin and destination studies.

A traffic operations project, the development of volume warrants for left-turn storage lanes at unsignalized intersections, has been completed.

New projects initiated this year have been the evaluation and development of a satisfactory multipath traffic assignment method for use in traffic planning, and the carrying out of a licence-plate trace survey on the Macdonald-Cartier Freeway in Toronto in order to test and refine techniques of collecting limited origin-destination information over a small area, primarily for purposes of traffic surveillance.

#### STUDIES OF THE SKID RESISTANCE OF PAVEMENT SURFACES

A Brake Force Trailer, which closely follows the ASTM Guidelines, has been constructed and preparations are in progress for a skid resistance survey of the provincial highways. The trailer is shown in the accompanying picture.

More than 5,000 tests will be taken in the course of the survey. Test locations are planned so as to be representative of all highways in Ontario and data are being assembled relating to pavement type, source of materials used in the construction, age of the pavement and traffic density. Equipment has been devised to obtain stereophotographs of each pavement surface tested with the skid trailer. The results of the survey will be analysed for the following purposes:

- to ascertain the various levels of skid resistance in the Province,
- to relate skid resistance measurements to the pavement type (asphalt, concrete, surface treatments),
- to find out what effect rock and gravel types have on skid resistance,
- to find the effect of pavement wear (age and traffic),
- to relate skid resistance and accident frequency,
- to explore the surface texture of pavements with a view to identifying the important textural elements and possibly correlating texture and skid resistance.

#### ULTIMATE LOAD CAPACITY OF BRIDGES

Work on this problem has now reached the point at which a design is being prepared for bridge load-testing equipment which will enable all bridges to be assigned a load rating.

Plans are also being studied for a structural model testing facility which would greatly facilitate further structural research on bridges and provide a much-needed service to structural designers.

#### MAINTENANCE MANAGEMENT STUDY

The Maintenance Management Study, being conducted for the Operations Branch by the Consulting firm of Roy Jorgensen and Associates, Highway Engineering and Management Consultants, has made steady progress during the year.

Two new functional groups have been created, the Methods Group to examine work methods and carry out the studies, and the Training Group to develop the required maintenance training programs. Both groups are staffed entirely by Department personnel. It is envisaged that the Methods Group will ultimately become an addition to the Head Office Maintenance Division to be responsible for developing

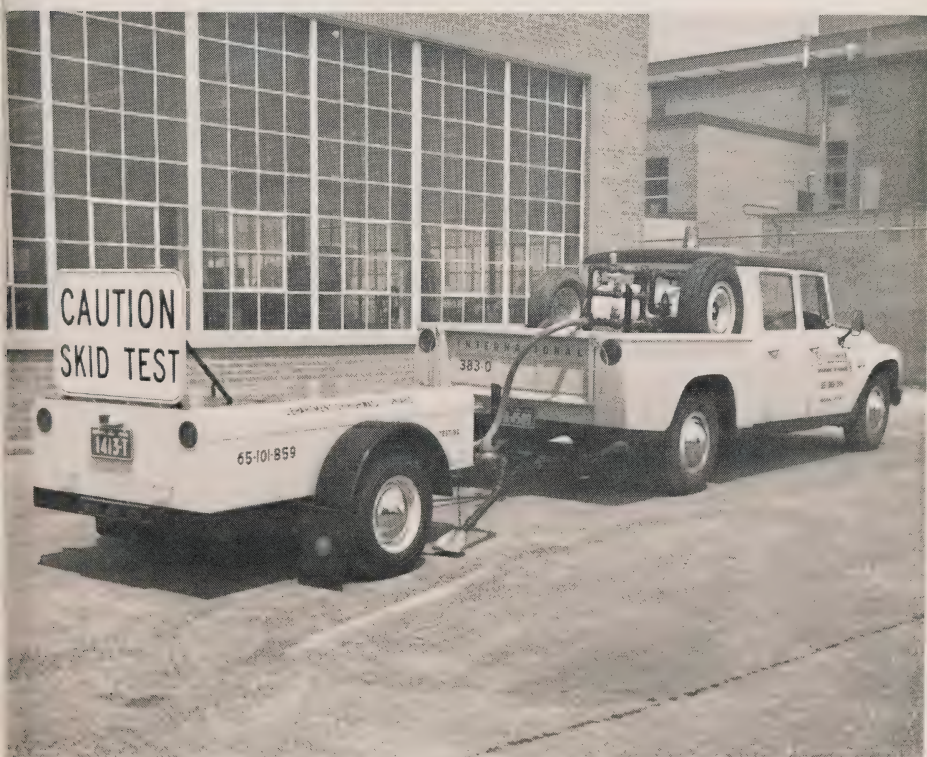
performance standards, work methods and for servicing the information reporting system.

The Training Group have had an introduction to the theory of programmed instruction and its leader has attended a short course in this subject at the University of Michigan.

Under the Consultant's guidance, work was started on production of a syllabus of training, but experience showed that a better approach would be the development of specific training courses to meet specific problems. The group produced a training document establishing policy concerning the application of salt for winter control. This was coupled with the Methods Group development of a procedure for calibrating and setting discharge rates from the Department's sander units. A follow-up is planned to assess the effect of the training and calibrating procedure on the results achieved and the salt usage.

Work is proceeding on refining reporting procedures preparatory to installing the revised system in a further three Districts on March 16th, 1967.

Planning values and work quantities for the various road types have been developed through analysis of data from the Port Hope District. These will be used in 1967 as initial input for reports to be produced for the four test Districts, comparing planned performance with actual performance.



Skid testing equipment. Photo 6992—(Research Br.)

## STRUCTURAL EVALUATION OF LIGHTLY-TRAFFICKED ROADS

Very little experience is available on the application of the Benkelman Beam towards the evaluation or design of pavements for the small traffic volumes commonly encountered on municipal roads and streets—particularly those protected by load restrictions in the Spring.

A study is in hand involving 90 test sections located in the cities of Windsor, Chatham, St. Catharines and Lindsay, in the counties of Bruce, Oxford, Welland, Grenville, Dundas and Carleton, and in the townships of Wilmot and Augusta. The study is designed to produce information which will enable deflection criteria to be fixed for design purposes.

Two Fall coverages of the test sites with the Benkelman Beam have been accomplished, as well as Spring studies of the Present Performance Rating and Pavement Condition. Arrangements are now being made to obtain data on pavement thicknesses and materials at these sites during the coming Summer with a view to terminating the study in 1967.

## PERFORMANCE OF CONCRETE PAVEMENTS UNDER TRAFFIC

In recent years certain changes have been made in the design of slabs for concrete pavement to take account of the ever-increasing intensity of traffic. The changes made, which have principally involved a progressive shortening of the slab length to reduce the incidence of intermediate transverse cracking, have been the subject of a recent study to evaluate their effectiveness. Work undertaken during the year has included surveys of the incidence of cracking and the conditions of joints.

In some special tests, selected sections of concrete slabs have been artificially moved at the joints with jacks so that the degree of restraint to free movement at the joints could be determined. Considerable work, both in the field and laboratory, remains to be done, but present indications are that the joints have remained free to move and that an explanation remains to be formed for the much greater transverse cracking in the older slabs with the layer joint spacing than was expected from the design theory in vogue at the time they were constructed.

## ACCELERATED STRENGTH TESTING OF CONCRETE

Conventionally the strength of concrete is tested after it has cured for 28 days but construction proceeds so rapidly these days that this is too long to wait to find out if the concrete will be of acceptable strength. Methods of accelerating the curing of concrete test cylinders have been under investigation in both the laboratory and the field for some years. The procedures used have involved boiling the cylinders after an initial delay period. Though reliable, the overtime work involved has precluded the large scale use of this method.

An alternative procedure has been developed in the laboratory called autogenous curing. In this procedure cylinders are cured for 2 days in insulated containers. Very little of the heat of reaction is allowed to escape and the temperature of the concrete rises and accelerates the development of strength. Both in the laboratory and in field trials the test is providing a reliable indication of concrete 28-day strength, 26 days sooner than it would be available by the conventional procedure.

## D.H.O. TECHNICAL REPORTS

Fifteen technical reports were published during the year. Ten of these were prepared by Department Staff and five resulted from research projects carried out at Ontario universities under the Ontario Joint Highway Research Programme.



Reports prepared by Department Staff were as follows:

- Report RB 116 "Concrete Paving Practice in Ontario", by P. Smith (Originally Prepared for presentation at the 46th Annual Convention of the Canadian Good Roads Association)
- Report RB 117 "The Overloading of Simple-Span Bridges", by K. G. Tamberg and F. W. Jung
- Report RR 118 "Evaluating of Field-Moulded Joint Sealants for Concrete Pavements and Structures", by B. Chojnacki
- Report RR 119 "Construction of a Full-Scale Road Experiment as a Part of a Unit-Price Contract", by R. Schonfeld (Presented at the 47th Annual Convention of the Canadian Good Roads Association)
- Report RR 120 "Tungsten Carbide for Snow Plow Blades", by J. R. Fitzpatrick (Presented at the 46th Annual Meeting of the Highway Research Board)
- Report RR 122 "Volume Warrants for Left-Turn Lanes at Unsignalized Grade Intersections", by M. D. Harmelink
- Report RR 124 "Earlier Determination of Concrete Strength Potential", by P. Smith and H. Tiede (Presented at the 46th Annual Meeting of the Highway Research Board)
- Report RR 125 "Computer Evaluation of Concrete Quality", by P. Smith (Presented at the 47th Annual Convention of the Canadian Good Roads Association)
- Report RR 128 "A Theory of Recreational Highway Traffic", by R. I. Wolfe (A revised version of Appendix 'B' of this report was presented at a meeting of the Highway Research Board, Department of Traffic and Operations, Origin and Destination Committee)
- Report RR 129 "Functional Relationships Between Actual Truck and A.A.S.H.O. Design Loadings for Simple Span Bridges", by K. G. Tamberg and F. W. Jung

Five other reports prepared by D.H.O. Staff were published as follows:

- "Aids to Objective Decision Making for Highway Maintenance Engineers", by A. Leslie  
(Presented at the 46th Annual Meeting of the Highway Research Board)
- "Highway Maintenance Training in the Province of Ontario", by A. Leslie  
(Presented at the 46th Annual Meeting of the Highway Research Board)
- "Case Histories of Poor Durability of Concrete in Ontario Highway Structures", by J. Ryell and P. Smith  
(Presented at the National Research Council Symposium, 63rd Annual A.C.I. Convention)
- "Responsibility for Quality in Highway Construction", by P. Smith  
(Presented at a Conference Session on Quality Control at the 46th Annual Meeting of the Highway Research Board)



“Unknown Properties of your Concrete”, by M. S. Yolles and P. Smith  
(Presented at the Ontario Concrete Conference, Toronto)

#### THE ONTARIO JOINT HIGHWAY RESEARCH PROGRAMME

New projects authorized under this programme during 1966/67 were as follows:

At Queen's University:

1. In situ measurement of the permeability of clays (Q-41)

At Waterloo University:

1. Safety Aspects of Intersection control devices (W-7)
2. Economic evaluation framework for Regional Highway Planning Studies (W-8)
3. Further applications of Systems models in Recreational Travel Studies (W-9)

Reports published under the Ontario Joint Highway Research Programme were as follows:

- Report RB 112 “Volume Density Relationships and their use in the Study and Prevention of Kinematic Waves in Traffic”, by Professor R. J. Wheeler and Dr. E. M. Tory (Final report on Project M-1, McMaster University)
- Report RR 115 “Prediction of Scour at Bridges”, by Dr. A. P. Herbich and L. M. Brennan (Final report on Project A-1, University of Windsor)
- Report RR 121 “Trip Generation and Attraction Characteristics in Small Cities”, by M. D. Harmelink, G. C. Harper and Professor H. M. Edwards (Final report on Projects Q-25 and Q-34, Queen's University)
- Report RR 123 “Aerial Triangulation in Highway Engineering”, by Professor J. Vlcek (Final report on Project T-25, University of Toronto)
- Report RR 126 “A Systems Model for Recreational Travel in Ontario”, by Dr. J. B. Ellis (Final report on Project W-6, University of Waterloo)

## SERVICES BRANCH

**L. R. EADIE, Director of Services**

The Services Branch, through its various sections, functioned throughout the year as co-ordinator and expeditor of services for the other branches of the Department.

The eleven Sections of the Services Branch are:

1. Executive
2. Administrative
3. Documents
4. Equipment
5. Office Services
6. Special Services
7. Supply
8. Tenders

### RIGHT-OF-WAY DIVISION

9. Land Surveys
10. Property
11. Regional Services Managers

### ADMINISTRATIVE SECTION

**L. Monkman, Administrative Officer**

The Administrative Section administers the clerical processing of accounts payable and receivable, personnel records and documentation, attendance recording, preparation of payrolls and compilation and maintenance of the statistical records of the Services Branch. The Section also formulates and implements the procedures for these functions.

### DOCUMENTS SECTION

**M. Fraser, Superintendent**

The Documents Section provides record management services for the Department. These services include the development and implementation of record retention policy, the use of microfilm and the establishment of filing systems to meet information requirements. A central repository is maintained for the safekeeping of documents and as a composite source of information.

The maintenance of a registry of engineering drawings and property plans for control and reference purposes is a further responsibility of the Section.

The Section also maintains 3 technical libraries, arranges subscriptions and distributes periodicals throughout the Department.

A writing and editing service is provided for bulletins and instructional manuals.

### EQUIPMENT SECTION

**V. G. Cooke, P.Eng., Superintendent**

The Equipment Section provides equipment for the department and the technical supervision necessary for the maintenance of such equipment.

The Head Office staff prepares specifications; inspects all major equipment purchases, and develops new machines.

Budget requirements for equipment replacement are based on a cost analysis program worked out in conjunction with the Electronic Computing Branch. Additional equipment is also supplied to take care of expanding departmental responsibilities and services.

Control of departmental usage of equipment, and cost of repairs, is done through a continuing study carried on by the Section, working with the Electronic Computing Branch.

General supervision and organization of D.H.O. garages, staffs, equipment, records, and procedures, as well as vehicle maintenance methods and programs, are the responsibility of the Section.

The Section operates two garages—District No. 42 at Downsview, and Surrey Place at the Parliament Buildings. It also operates the Instrument Repair Shop and a Machine Shop at Downsview. Its Training School was active throughout the Province, giving courses to D.H.O. mechanics and allied trades.

Four miles of asphalt roads were “deslicked” by the Section’s Deslicker.

The Section’s tree planters moved and replanted 746 trees and shrubs.

The Section arranged for and supervised the drilling of 19 wells. The Well Testing unit cleaned and tested 20 wells.

Several mud jacking operations were carried out during the year.

Staff is supplied by the Section for instrument evaluation studies, special engineering work, and special ferry projects.

The Section is responsible for the control of parking spaces for employees, the policing of the parking lots at Downsview, and the winter maintenance operation in the Downsview area.

Drives, parking lots, and miscellaneous areas adjacent to the Department’s buildings at Downsview are maintained by the Section.

## OFFICE SERVICES SECTION

### S. C. Booth, Superintendent

The Office Services Section is responsible for the procurement of office supplies, furniture, office equipment, stationery, manuals and medical supplies and for the distribution of these to all Regional and District Offices, Branches and Sections of the Department.

This Section is organized into various operating units, each with clearly designated functions and responsibilities. The units immediately connected with the steady stream of D.H.O. requests for office supplies and services are the Stationery Stock and Office Equipment, Forms Control, Postal, Manuals Control, Whiteprint and Photographic and Offset Reproduction Units. The supplies and services rendered by the Office Services Section is indicated by the volume of requests processed during the year.

1. Stationery Stores and Equipment  
Requisitions processed (averaging 6 items per requisition)..... 16,948
2. Forms Control Unit  
Initiated in October 1965 has been instrumental in reducing overall number of forms in use by 219. Total numbered forms in active use 1,590.

## 3. Postal Unit

Total incoming post, including registered mail.....	406,547
Total dispatched post .....	544,424

## 4. Manuals Control Unit

Issued 9,704 copies of procedural manuals, the majority being issued to Departmental personnel. Also maintained an up-to-date mailing list and processed 309 requests for printing and mailing revisions to up-date existing manuals.

With the exception of manuals restricted to Departmental use, complimentary copies are issued on request to Ontario Provincial Departments, Federal and State Highway Departments and University Libraries.

Unrestricted manuals are also available to contractors, municipalities and other people engaged in Highway construction.

## 5. Whiteprint and Photographic

Requisitions processed 21,398 (reproducing over 1,824,000 lineal feet of white-prints and 69,100 photographic exposures).

## 5. Offset Reproduction

Requisitions processed 8,665 (reproducing over 17,900,000 impressions from 72,909 printing plates).

## SPECIAL SERVICES SECTION

## C. S. Moase, Manager

The Special Services Section acts for the Department in liaison with the Department of Public Works in all matters pertaining to buildings, building sites and office and shop accommodation. The Section is also responsible for all communications within the Department such as telephone, teletype and radio facilities. The Administration of Service Centres on controlled access highways also falls within the Section's jurisdiction.

## SERVICE CENTRES

The Section is responsible for administering the Department's policy regarding the selection, development, leasing and subsequent inspection of Service Centres and the selection and development of "Rest Areas" on controlled access highways. At the conclusion of the 1966-67 fiscal year, fifteen Service Centres had been established on the Macdonald-Cartier Freeway and an additional two sites were under construction and scheduled to be in operation by the summer of 1967. Two sites remain to be developed to complete our present Service Centre program for the Freeway and tenders for these sites have been called. Construction will be undertaken in conjunction with the highway project between Gananoque and Brockville and completion is not expected before the Spring of 1969.

Public use of Service Centres continues to exceed all expectations and many of the lessees have found it necessary to expand their facilities to cope more adequately with the peak volumes encountered during the summer months. This has been particularly true at the original eight sites where renovation and expansion has become almost an annual occurrence. As an example, one Centre is presently adding a cafeteria to supplement existing dining room and take-out facilities. The cafeteria is designed to seat in excess of 100 persons and with this addition present seating capacity will be almost doubled. During the year, two additional Service Centres were established on High-





Service Centre Hwy. 401 at Odessa. Photo 8202-A—(Services Br. Special Services Section)

way 400. This brings to four the number of sites now operating on this highway and the opening of the new sites has had the effect of more evenly distributing the volume of business thus relieving the overcrowded conditions at the original two sites during the busy summer months.

Ten of the fifteen picnic areas established adjacent to existing Service Centres on the Macdonald-Cartier Freeway were open to the public and were used during the summer of 1966. Development of remaining picnic sites, including two on Highway 400, is nearing completion and all will be available during the coming season. Improvement of picnic areas is, of course, a continuing program and during 1967 additional tree planting, clearing, seeding and mulching will be done. During 1966 toilet facilities were provided in ten picnic areas and tenders for construction of these facilities at an additional eight sites are presently under call.

During the year approval was received to proceed with the development of Rest Areas. These areas will provide the motorist with facilities such as comfort stations, water, picnic tables, barbecues, telephone, information bulletin board, etc. Suitable sites have, or are being, selected and a five year construction program has been established.

## COMMUNICATIONS

### RADIO

During 1966-67 the Section processed a total of 2,906 communication requests. A new radio system employing latest selective calling techniques was installed in Kingston District. This system is comprised of 6 Repeater/Trunk terminal stations, 6 patrol yard radio stations and 47 mobile radio units. District radio coverage is complete, and signal

levels throughout are more than adequate. The equipment is of the most advanced type and reliability is expected to be high in view of extensive transistorization of all equipment items.

A radio system propagation survey was completed relative to the re-design and replacement of the existing radio system in Owen Sound district. A propagation survey has been partially completed for a new radio system for the Ottawa district.

To extend the radio coverage of the New Liskeard radio system to accommodate the development of new highways a number of radio path and mobile tests were conducted with good results.

A sustained path level test was made in the Sault Ste. Marie radio system which has determined the need for an intermediate Repeater/Trunk relay station to serve the new Highway 101 and to augment the radio trunk signal levels between Chapleau and Wawa.

Cochrane district radio system was expanded by addition of a patrol yard radio station at Hornepayne. In the Toronto District radio system, the radio station at Greenbank was relocated at Manchester.

Negotiations with the Federal Department of Transport were conducted with the object of obtaining new V.H.F. frequency assignments for the Ottawa and Owen Sound radio systems.

A number of new transceiver units (Walkie-Talkies) were tested successfully. Investigation of Single-Side Band radio equipment was begun and a study of thermal electric generating plants was undertaken in an attempt to provide a more reliable power source for Department radio repeaters in remote regions. Use of Department radio towers at Bancroft, Mattawa, Point Alexander, Hilton was extended to the Ontario Provincial Police to help solve radio coverage problems.

Antenna mounting space was provided on the Department's Kingston main radio tower for the installation of an antenna required to augment radio facilities for the Department of Lands and Forests.

Antenna mounting space was also provided for E.M.O. organizations on Department towers located at Downsview and Haliburton.

#### TELEPHONE

Automatic switchboards were installed in North Bay, Port Hope and Hamilton district offices providing much improved service and incorporating dial intercom facilities. Extensive telephone system changes were completed for Traffic and Program Sections at Downsview.

W.A.T.S. (Wide Area Telephone Service) facilities at Owen Sound District office were expanded to include a Zone 2 service.

A telephone system was installed for the "Go-Transit" administration office in Toronto and orders for the provision of pay telephone booths at "Go-Transit" stations were issued.

#### TELETYPE

The Downsview Teletype Centre equipment underwent extensive modification and the Auto-Call equipment was modernized by the introduction of solid-state modules on each circuit. The teletype handled a total of 215,565 messages during this period.

## INTERCOM AND PUBLIC ADDRESS

Public address systems were installed in the Huntsville District office, the Owen Sound Garage and in the Stockroom and Stationery Stores of the Administration Building, Downsview.

The system at the Stratford District office and Garage was modified.

Intercom systems were provided for Traffic and Purchasing Sections at Downsview and an extensive intercom system has been designed for the White Print and Photographic areas in the Administration Building at Downsview.

## ACCOMMODATION

Department of Highways' space requirements are under constant review by the Accommodation Staff. Arrangements are made with the Department of Public Works for added leased space and new buildings. This year it was necessary to occupy additional leased office space:

- North Bay —850 square feet on Algonquin Avenue to accommodate additional Property office staff.
- 1,232 square feet on First Avenue to accommodate additional District office staff.
- 400 square feet on Main Street to locate the office of the Regional Bridge Engineer.
- Toronto —1,680 square feet on Yonge Street (downtown) to establish the "Commuter Rail Service".
- New Liskeard—3,080 square feet on Whitewood Avenue to accommodate additional District office staff.

In addition to the leased space, we were fortunate to obtain the use of 500 square feet in the Government building at Sault Ste. Marie. This space was utilized by our District Office to accommodate the increase of Municipal Roads personnel. Also, the relocation of the Conservation Authority of the Department of Energy and Resources management from Downsview allowed us to establish the Research Branch in permanent quarters.

By arranging the transfer of District personnel to Kenora we were able to make our Fort Frances office available to the Department of Welfare.

Continued use is being made of various residences, acquired as a result of the reconstruction of the Macdonald-Cartier Freeway across Metropolitan Toronto, to provide temporary accommodation for field research groups, construction field offices, etc.

At Kingston, Ontario we completed the transfer of staff from various locations to the new Administration Building, and all building service contracts were completed. Our application to the Treasury Board for an air-conditioning system for this building was approved and installation of this system is expected early in 1967.

The installation of an air-conditioning system covering the Central Stores Offices, the Toronto District Office and the Central Region Office is approved and the equipment is scheduled for installation in April 1967. The construction of an extension to the Central Regional Building, as approved by the Treasury Board will require a separate air-conditioning system.

Approval was granted by the Treasury Board for:

1. Construction of one single family residence at Nagagami, Ontario and "approval



to plan" for an additional six family residences and a bunkhouse. The single family residence has been constructed and planning for the balance of the project is well advanced.

2. Planning and construction of a major graphic arts operation, including darkrooms and camera galleries at Downsview. The planning has been completed, with provision being made for temporary facilities to accommodate the operation of the major cameras (Borrowdale and Klimsch) during the construction period. Work is expected to commence in May 1967.

With the trend toward consolidation of Department of Highways Ontario offices in major Government buildings an engraving machine has been acquired to manufacture plastic office signs. It is hoped that the standardization of these signs will improve public relations as well as effecting substantial economies.

### BUILDINGS

Through arrangements with the Department of Public Works and the Treasury Board, 15 Salt Sheds and 12 Temporary Patrol Offices were constructed under the supervision of the Section.

An experimental 80' diameter "Dome" structure for the protection of the sand-salt stockpile at our Flesherton patrol yard was constructed by the Department forces and is now operational. The "Dome" is of frame construction and has proved most successful.

During the year, construction of 33 Metal Patrol Garages was undertaken, 29 were completed and 4 are in the final stages of construction. Approval to construct a further 7 Patrol Garages during the fiscal year 1967-68 was granted and this program is well underway.

Our yearly submission to the Department of Public Works and Treasury Board for new buildings contained 15 projects in order of priority. On March 1st, 1967 Treasury Board approved for planning the top ten projects and we commenced compilation of our detailed requirements on these projects for transmission to the Department of Public Works.

### SUPPLY SECTION

**J. W. Rawlings, Superintendent**

The Supply Section is the material purchasing and distribution arm of the Department. The three basic services provided are: Purchasing; Materials Control and Central Stores.

The Purchasing group buys most material for construction, and the larger road maintenance requirements such as salt; calcium chloride and emulsions. This office also buys a wide range of equipment and supplies, including trucks; graders; snowblows; furniture; office equipment and many others. In all, about 10,000 purchase orders are issued annually to cover about \$30,000,000 worth of goods and supplies. Virtually all purchasing is done through the competitive tender system. Extensive registers of suppliers interested in doing business with the Department are maintained, and these firms are asked to tender on appropriate supply contracts as materials are required.

During the past year, contractors have been required to supply some selected materials for construction. This is restricted essentially to those products where extreme



difficulty had been encountered in scheduling delivery or controlling inventory during construction.

A wide range of operating supplies are distributed through Central Stores. This function allows for buying in volume at optimum prices, and permits rigid quality control at Headquarters laboratory. Annual volume of shipments from Central Stores reaches about \$2,500,000, while inventory averages about \$1,250,000. A Bailey Bridge supply service forms part of the Central Stores operation, and a steel fabricating service is also provided. At the end of the year new facilities had been completed to house the bailey bridge and steel fabricating services. This facility includes modern sand blasting, welding, and testing and painting equipment, and will greatly enhance these operations.

Disposal of all Department surplus material and equipment is handled by the Materials Control Unit. Most used equipment is sold at Public Auction, while scrap materials are usually sold by sealed tender. A concentrated effort is made to transfer surplus materials from one District to another. Revenue from sale of obsolete equipment and scrap materials and supplies totals about \$350,000 per year.

TENDERS SECTION

G. H. Garrett, Manager

The Tenders Section processes all tenders on Engineering Projects, Supply Contracts, Obsolete Equipment and Material Sales, Property Sales, Well Drilling Contracts, Photography Contracts and Special Services Projects.

The Section arranges formal public openings of tenders on all Engineering Projects and further provides for public attendance at all other tender openings.

It distributes all informational tender forms and tendering material and keeps a register of contractors and suppliers.

The Tenders Section advertises all lettings of contracts, auction sales, expropriation notices, Supply contracts, sales of obsolete equipment and material sales including those required by Districts and Sections. It processes all advertising accounts.

The Section collects the fees for tendering material and for sales of the manual on General Condition and Standard Specifications of the Contract and does the accounting for these transactions.

The Section Manager, or his assistant, acts as secretary at the weekly meetings of the Property Approval Committee.

During the 1966-67 fiscal year, the Tenders Section issued approximately 1,990 advertising orders for 2,694 advertisements. Total cost of advertising was \$82,856.70.

Tenders were called as follows:

(A) ENGINEERING CONTRACTS	
Contracts processed.....	460
Contracts awarded.....	436
Tendering material released (plans, profiles, etc.).....	4,164
Net tenders processed.....	1,787
Average number of bids per contract.....	3.88
(B) ENGINEERING CONTRACTS	
Invitation bids (contracts less than \$10,000.00 in value)	
Invitation contracts processed.....	31

Tendering material released.....	(Sets)	508
Net tenders processed.....		70
Average number of bids per invitation contract ..		2.25
<b>(C) SPECIAL SERVICES CONTRACTS</b>		
Invitation bids (contracts less than \$10,000.00 in value)		
Invitation contracts processed.....		70
Tendering material released.....	(Sets)	740
Net tenders processed.....		198
Average number of bids per invitation contract.....		2.825
<b>(D) PROPERTY SALE TRANSACTIONS</b>		
(Public tender)		
Sales processed.....		41
Net tenders processed.....		150
Average number of bids per sale.....		3.66
<b>(E) MATERIAL REQUIREMENTS</b>		
Supply contracts and enquiries processed.....		3,370
Net tenders processed.....		13,476
Average number of bids.....		4.00
<b>(F) OBSOLETE MATERIAL SALES</b>		
Number of sales processed.....		34
Net number of tenders processed.....		184
Average number of bids per sale.....		5.40
<b>(G) WELL DRILLING CONTRACTS</b>		
Number of contracts processed.....		26
Net number of tenders processed.....		56
Average number of bids per contract.....		2.10
<b>(H) PHOTOGRAPHY CONTRACTS</b>		
Number of contracts processed.....		2
Net number of tenders processed.....		10
Average number of bids per contract.....		5.00
TOTAL EXPENDITURE.....		\$129,325.81
GROSS REVENUE (sale of tendering material).....		34,060.00
REFUNDS.....		1,650.00
NET REVENUE (sale of tendering material).....		32,410.00
GROSS REVENUE (sale of specification manuals).....		2,925.00
REFUNDS.....		NIL
NET REVENUE (sale of specification manual).....		2,925.00
TOTAL NET REVENUE (all items).....		35,335.00

## RIGHT-OF-WAY DIVISION

### LAND SURVEYS SECTION

W. D. Ratz, O.L.S., P.Eng., Superintendent

The Land Surveys Section develops and formulates policies and procedures for legal and surveys, plan preparation and registration and associated functions affecting the surveying organization of the five regional offices which form an integral part of the Right-of-Way Division.

In addition to preparing all recommendations for Orders-in-Council necessary for the designations, closings, reversions or transfers of highways, the section, by review, maintains a uniform surveying and drafting operation in the regions; develops and co-ordinates new electronic computing procedures; directs control surveys and provides professional and technical guidance to the regional staff.

Through the regional offices, registration was obtained for 1,693 plans in the proper registry and land titles offices during the fiscal year.

The following table outlines the various types of plans prepared by the regional land surveys units. The plans are listed by type and grouped according to function. Included in the table are the number of plans and the total mileage of each type.

During the fiscal year 58.96 miles of highway were designated as controlled-access highways. This figure includes the designation of:

1. Kitchener-Waterloo Expressway
2. Belfield Expressway
3. Dundas By-Pass
4. Southwest Freeway (Ottawa)
5. Tillsonburg By-Pass
6. New Highway 27

The total mileage of controlled-access highways in the Province now stands at 1,833.48. Two interchange areas were also designated which did not, however, increase the total mileage.

The Land Surveys Section conducted one training course for field personnel during the year. The course was attended by 20 candidates. Land surveys qualifying examinations for field and drafting staff were tried by 188 candidates of whom 116 passed and 18 passed with supplementals. The apprentice program for Ontario Land Surveyors is being continued by this section and during the year two apprentices passed the final examinations.

Co-ordinate control surveys are in progress on sections of highways throughout the Province. This survey operation employs electronic survey instruments capable of measuring within a fraction of an inch any distance from 50 feet to several miles, and a transit which allows direct reading on angular measurements to one second.

By continued co-operation with Topographical Surveys, Department of Energy, Mines and Resources, Ottawa, additional nets of control monuments with geodetic values have been established on Highway 401 between Galt and London and along the Welland Canal in the Niagara Peninsula. These monuments are linked to the existing Toronto-Hamilton networks and will provide a basis for co-ordinate control surveys which have proved beneficial to the Department.

Appendices to this report give details of controlled-access highway designations and assumptions, designations, reversions and transfers of sections of the King's Highway, secondary highway and tertiary road systems.

### TOTAL NUMBER OF PLANS AND MILEAGE

TYPE	NOMENCLATURE	NO. OF PLANS	MILEAGE
PLAN TYPES A-G INCLUSIVE—ACQUISITION OF LANDS			
"A"	Land plan.....	854	327.23
"B"	Amended land plan.....	38	4.10
"C"	Limited interest plan.....	64	13.61
"D"	Plan of abandonment.....	21	1.36
"E"	Crown land plan.....	81	96.20
"F"	Amended crown land plan.....	3	—
"G"	Crown land abandonment plan.....	14	4.04

## PLAN TYPES I-M INCLUSIVE—ASSUMPTION OF EXISTING HIGHWAYS

"I"	Preliminary assumption plan.....	31	89.19
"J"	Amended preliminary assumption plan.....	—	—
"K"	Assumption (replacing).....	56	88.39
"L"	Assumption plan.....	52	24.45
"M"	Amended assumption plan.....	15	0.32

## PLAN TYPES N-P INCLUSIVE—DESIGNATIONS OF HIGHWAYS

"N"	Plan of a proposed highway.....	14	42.09
"O"	Highway plan.....	74	462.96
"P"	Controlled access highway plan.....	—	—

## PLAN TYPES Q-T INCLUSIVE—TRANSFERS AND CLOSING OF HIGHWAYS

"Q"	Reversion plan.....	3	6.76
"R"	Transfer plan.....	70	87.91
"S"	Road closing plan.....	61	32.15
"T"	Road closing plan (Ontario Municipal Board).....	5	4.15

## PLAN TYPES H AND U-X INCLUSIVE AND OTHERS—

## MISCELLANEOUS AND SPECIAL PLANS

"H"	Navigable waters plan.....	6	0.46
"U"	Plan to illustrate description (including description reference).....	220	42.92
"V"	Survey plan.....	11	8.05
"W"	Plan of Indian land.....	—	—
"X"	Connecting link designations and agreements.....	41	100.36
	Miscellaneous plans.....	46	1.52
	TOTALS.....	1,780	1,438.22

## PROPERTY SECTION

## L. W. Bond, Superintendent

The Property Section acquires property and property rights required for highway purposes, and settles claims arising from such acquisition. It also manages and disposes of land and buildings surplus to highway requirements.

During the year, 3,726 new agreements were negotiated. The carry-over from the previous year of 760 unpaid agreements added to the number of new agreements made a total of 4,486 to be paid. Of this total 3,223 were paid to a value of \$12,732,186.08. Additionally, expenditure on the Kitchener-Waterloo and Lakehead Expressways raised the amount to \$14,498,970.09.

At the close of the fiscal year, there were 4,050 property owners with whom agreements had not been negotiated compared with 2,804 last year at the same time. Requests to purchase property involving 4,784 new owners were received during the year compared to property requests involving 3,375 owners in the previous fiscal year.

The purchase of property for the Macdonald-Cartier Freeway (Highway 401), Windsor to Quebec border, exclusive of that required for the current widening project between Highway 48 and 27, has involved a total of 5,410 owners to date. Negotiated agreements total 5,388. Twenty-two are still unsettled.

The purchase of property for the widening of the Macdonald-Cartier Freeway (Highway 401) from Highway 48 to Highway 27 continues. A total of 90 properties including six buildings were purchased during the fiscal year, making a total to date of 586 properties including 244 buildings.



A total of 231 buildings have been removed or demolished by the methods indicated below:

1. Invitation tender.....	132
2. Public auction.....	57
3. Demolition by Highway contractor.....	13
4. Public tender.....	21
5. Demolished under agreement.....	2
6. Direct sale.....	6
<b>TOTAL.....</b>	<b>231</b>

When negotiations to acquire property reach an impasse, the property owner, or the Department, has the privilege of applying to the Board of Negotiation for a hearing. This hearing is informal, and although the Board's recommendations are not binding on either party, nevertheless 52 settlements have been secured out of 117 cases referred since November 1965.

Thirty-five applications were made to the Ontario Municipal Board for determination of compensation which added to a carry-over of 25, making a total of 60 categorized as follows:

1. Appointments heard and awards made.....	15
2. Appointments heard and judgement reserved.....	1
3. Settlements made, applications or appointments cancelled.....	14
4. Appointments not yet heard.....	11
5. Applications for which appointments not yet given.....	19
<b>TOTAL.....</b>	<b>60</b>

Before purchase, all properties were appraised by D.H.O. appraisers. In addition, 274 appraisals were completed by independent appraisers.

At the close of the fiscal year, 2,556 properties which were recorded as surplus to D.H.O. requirements, were under various stages of processing for disposal.

Revenue from sale of surplus property totalled \$160,599.70 and revenue from leased properties amounted to \$183,010.20.

#### REGIONAL SERVICES MANAGERS SECTION

Each Regional Services Manager reported directly to the Director of Services on the activities of the property acquisition, land surveying and administrative groups in his Region.

Following is a list of Regional Services Managers and the Region to which each was assigned.

1. D. F. Walton.....	South-western
2. H. Aron.....	Eastern
3. M. W. Robinson.....	Central
4. D. W. Baird.....	Northern
5. A. E. Lodge.....	North-western

# CONSTRUCTION OF THE TRANS-CANADA HIGHWAY

[including Ottawa Queensway, 1966-1967]

F. C. MUIR, P.Eng., Contract Control

This year construction work on the Trans-Canada Highway progressed at about the same rate as last year.

Grading completed this year was approximately 22 miles as compared with 28 miles the previous year. Paving completed this year was approximately 33 miles as compared to 27 miles the previous year. Four new structures were completed compared to six last year.

On the Ottawa Queensway the last section of new construction from O'Connor St. to Alta Vista Drive was completed and opened to traffic in the fall.

In the Kingston District the grading of the Madoc by-pass was completed and work began on the granular base and paving.

In the Sault Ste. Marie District the construction from 8.82 miles north of Secondary Highway 563 northerly to Mica Bay was completed. Construction was also completed from 0.63 miles east to 0.89 miles west of Desbarats River bridge.

In the Fort William District, progress in the reconstruction between English River and Ignace covering 36 miles continued.

The total work on the Trans-Canada Highway completed to the end of the year was:

Grading and Culverts.....	1,271.82 Miles
Bituminous Hot Mix Pavement.....	1,195.13 Miles
Permanent Bridges and Structures built.....	176

## GRADING AND CULVERTS

DISTRICT	Hwy.	LOCATION	TOTAL MILES	COMPL. PREVIOUS YEARS	COMPL. THIS YEAR
Ottawa	Q'way	Main Street easterly.....	0.49	0.39	0.10
Ottawa	Q'way	Alta Vista Drive.....	0.50	0.25	0.25
Kingston	7	Madoc by-pass.....	3.09	2.94	0.15
Sault Ste. Marie	17	From 8.82 mi. north of Hwy. 563 northerly to Mica Bay.....	11.35	8.17	3.18
Sault Ste. Marie	17	From 0.63 mi. east to 0.89 mi. west of Des- barats River bridge.....	1.52	—	1.52
Fort William	17	11.2 mi. west of English River westerly 13.52 mi.....	13.52	6.00	7.52
Fort William	17	23.6 mi. west of English River to Ignace....	11.10	—	8.50
Fort William	17	10.3 mi. east of Port Arthur easterly 3.12 mi.....	3.12	—	1.50
TOTALS.....			44.69	17.75	22.72

## BITUMINOUS HOT MIX

Ottawa	Q'way	Alta Vista Drive.....	0.50	—	0.50
Kingston	12	Beaverton by-pass.....	8.23	1.56	6.67
Sault Ste. Marie	17	From 8.82 mi. north of Hwy. 563 to Mica Bay.....	11.35	—	11.35
Sault Ste. Marie	17	From 0.63 mi. east to 0.89 mi. west of Desbarats River bridge.....	1.52	—	1.52
Fort William	17	11.2 mi. west of English River westerly 13.52 mi.....	13.52	5.30	8.22
Fort William	17	23.6 mi. west of English River to Ignace....	4.70	—	4.70
Fort William	17	10.3 mi. east of Port Arthur easterly 3.12 mi.....	3.12	—	0.60
TOTALS.....			42.94	6.86	33.56

## GRANULAR BASE (NEW GRADING)

Sault Ste. Marie	17	From 8.82 mi. north of Hwy. 563 northerly to Mica Bay.....	11.35	8.17	3.18
Sault Ste. Marie	17	From 0.63 mi. east to 0.89 mi. west of Desbarats River bridge.....	1.52	—	1.52
Sault Ste. Marie	17	From 19 mi. north of Hwy. 563 northerly to Montreal River.....	11.13	—	4.00
Fort William	17	11.2 mi. west of English River westerly 13.52 mi.....	13.52	6.00	7.52
Fort William	17	23.6 mi. west of English River to Ignace....	11.10	—	8.50
Fort William	17	10.3 mi. east of Port Arthur easterly 3.12 mi.....	3.12	—	1.50
TOTALS.....			51.74	14.17	26.22

## NEW BRIDGES

Ottawa	Q'way	Nicholas Street
Ottawa	Q'way	Lees Avenue
Ottawa	Q'way	Alta Vista Drive
Fort William	17	McIntyre River

TOTAL — 4 new bridges.

## MINING, ACCESS AND RESOURCES ROADS REPORT, 1966-67

T. C. MUIR, P.Eng., Secretary

Mining and Access Roads Committee (Interdepartmental)

The Mining and Access Roads Committee consisting of the Treasurer of Ontario, and Ministers of the following Departments: Highways, Lands and Forests, Mines, Municipal Affairs and the Minister without Portfolio, administers a fund which is voted by the Legislature in the Department of Mines estimate for carrying out works under the Roads-to-Resources programme and under the Mining Assistance programme of the Department of Mines.

The Roads-to-Resources programme was carried out under an Agreement between the Federal Government and the Province of Ontario, and under this Agreement, the Department of Highways, Ontario, acting as an agent for the Ontario Government, designed and supervised this programme. This Agreement provided for an amount of

\$15,000,000 to be expended by March 31st, 1967, and these costs were shared between the Federal Government and the Provincial Government on an approximately \$7,500,000 each basis. In cases, however, wherein a private enterprise directly benefited, the costs of the work involved would be shared between the two Governments and the private company concerned. The original Agreement terminated March 31st, 1967, but later in the year 1967, the Federal Government granted an extension to permit a total expenditure of \$7,500,000 as the Federal Government's share.

The following was accomplished this year:

#### NORTH BAY DISTRICT

##### Mining Assistance Road:

Through funds provided by the Department of Mines for the construction of mining access roads on a shareability basis with the mining corporation concerned, last year three miles of grading was completed on the access road into the extensive Cleveland Cliffs of Canada-Sherman Mine and during this year negotiations were commenced to pave this section through the same assistance fund and this work would be carried out in the fiscal year 1967-68.

#### SAULT STE. MARIE DISTRICT

##### Mining Assistance Road:

Through the mining assistance fund provided by the Department of Mines that Department contributed approximately \$17,000 this year towards the costs of construction and reconstruction of the 17 mile access road into the Tribag Mining Company operation.

#### FORT WILLIAM DISTRICT

##### Resource Road—Central Patricia northerly:

This road is a project under the Roads-to-Resources Agreement and during this fiscal year a long Bailey Bridge structure was completed over the Otonkwin River and clearing of the right-of-way was pushed forward for a further 3.6 miles north of the Otonkwin River.

##### Mining Assistance Road:

Contribution was made this year under the mining assistance fund by the Department of Mines on a 50/50 basis towards the cost of construction of the access road into the Sapawe Gold Mines.

#### NEW LISKEARD DISTRICT

##### Mining Assistance Road:

Under the mining assistance fund from the Department of Mines on a shareability basis with the mining corporation, the new access road grading that was constructed into the Jones & Laughlin Iron Ore Mine east of Highway 112 last year, was paved this fiscal year over some 6.2 miles of this new construction and 4.7 miles of this new paved road has now been assumed as Secondary Highway 650 under the Department of Highways.



Under the same assistance fund the fine grading and hot mix paving was completed on the access road into the Texas Gulf Sulphur Mine from Highway 101 northerly for some 17½ miles and 13.4 miles of this new access road has now been assumed as Secondary Highway 655 under the Department of Highways.

### RESOURCES ROADS, 1966-67

Financed Partially by the Province under the  
Federal-Provincial Roads-to-Resources Agreement

DISTRICT	LOCATION	YEAR BEGUN	TOTAL MILES	MILES COMPL. PREVIOUS YEARS	MILES COMPL. 1966-67	MILES TO COMPL.
New						
Liskeard	Foleyet west.....	1958	34.0	34.0	—	—
Sudbury	Flack Lake Road.....	1963	38.0	10.5	—	27.5
Sault Ste.						
Marie	Chapleau east.....	1958	26.0	26.0	—	—
Fort						
William	Nakina to Terrier Lake.....	1959	47.0	47.0	—	—
	Savant Lake to Hwy. 17.....	1959	79.6	79.6	—	—
	Hwy. 17 to vicinity of Cheeseman Lake.....	1959	74.5	74.5	—	—
	Central Patricia, northerly to 10 mi. north of Otokwin River.....	1962	47.0	37.0	—	10.0
Kenora	Minaki south.....	1959	21.5	21.5	—	—
	TOTALS.....		367.6	330.1	—	37.5

### MINING AND ACCESS ROADS, 1966-67

Financed Partially by the Province

During this fiscal year the Department of Mines through the administration of the Mining and Access Roads Committee contributed approximately \$123,869 towards the cost of construction of five access roads, serving each of the Tribag Mining Company, Texas Gulf Sulphur Company, Sapawe Gold Mines Limited, Crownbridge Copper Mines Limited and Munro Copper Mines Limited.

The financial shareability on behalf of the Department of Mines in each of the above cases would either be on a straight 50/50 basis with the mining corporation concerned or on a fixed contribution by the Department of Mines in an amount not to exceed \$7,500 per mile, whichever was the lesser.

The financial contribution by the Department of Mines for this fiscal year was 42 per cent greater than the similar contributions for the previous fiscal year 1965-66.

### CONTRACT WORK FOR 1966-67

T. C. MUIR, P.Eng., Contract Control Engineer

During 1966-67 Capital construction contracts were completed on 410 miles of grading, 417 miles of hot mix paving, 34 miles of concrete paving and 76 structures with 373 capital contracts being completed along with 147 maintenance contracts.

In the fiscal year 1966-67 286 capital construction contracts and 149 maintenance contracts were awarded and this new capital work covered 151 miles of grading, 191 miles of hot mix paving, 316 miles of grading and hot mix paving and 69 structures of various types.

The number of contracts of all types awarded this year was approximately the same as the previous year with 435 contracts being awarded this fiscal year as compared to 439 of the previous year. There was also a considerable reduction in the monetary value of the contracts awarded this year but this was due to the awarding of the very large contracts on the Macdonald-Cartier Freeway (Toronto By-pass) and the Thorold Tunnel of the previous year.

The Department of Highways through its Qualification procedures imposed further penalties against the contractors who did not perform work in accordance with the Department's procedures and this year the total number of penalties imposed to date since the inception of the procedures are 178 warning letters and 127 reductions in the contractors' Qualification ratings. These warning letters and reductions would be the result of several shortcomings of the contractor relative to administration, quality of work, public relations, adherence to regulations and specifications and, finally, conditions and sufficiency of equipment. 61 per cent of all the contracts awarded this year contained the Qualification requirements and this was a reduction from the 70 per cent of the previous year but this fiscal year witnessed an increase in the number of contracts that do not come under the Qualification procedures at present, such as those contracts for seeding and mulching, small crushed gravel contracts, bridge painting, fence erection and application of calcium chloride to name a few. However, in respect to the total monetary value of all the contracts awarded this year the Qualification procedures were applicable to approximately 95 per cent of the total value of the contracts awarded.

The application of liquidated damages in the Department's contracts have proven a very efficient medium toward having contracts finished within the completion date of the contract, and therefore, these liquidated damages have been installed in well over 95 per cent of all the contracts advertised this year.

There are occasions when the urgency does not permit a reasonable period for advertising and full scale pre engineering, and in such instances, the Department resorts to an Invitation Bid procedure but these contracts are of a relatively small tender value but the preparation of the tender and the tendering procedures are identical to the normal publicly advertised contracts. The number of contracts under the Invitation procedure this year was 31 of which 21 were awarded.

The Contract Control section performs the function of preparing tenders and arranging for the closing of tenders for those contracts coming under the jurisdiction of the Special Services section of the Services Branch of the Department. These contracts would apply to such operations as plumbing, heating, ventilation, electrical work, garage doors, salt shed erection and patrol garage construction. The Invitation Bid procedure is adopted in such contracts since the nature of the work is highly specialized and the Department has a complete roster of such specialists and also many local contractors in small centres at or near the sites of construction are quite capable of carrying out the work in this type and therefore these people are invited in large numbers to bid on these relatively small and localized projects. In this case, therefore, the Invitation Bid principle best serves the purpose both of the Department and the small local contractors, and for the Special Services section this year the Contract office prepared and processed some 69 of which 59 were awarded.

**TYPE OF WORK**  
**Contracts Awarded 1966-67**

MAINTENANCE		TOTAL
Prime dust layer.....		9
Crushed gravel (including 50 capital contracts).....		98
Hot mix patching.....		23
Surface treatment.....		8
Winter sanding.....		15
Screened sand.....		17
Bridge painting.....		10
Calcium chloride apply.....		7
Resurfacing.....		9
Tree removal.....		2
Miscellaneous.....		1
TOTAL.....		199
CONSTRUCTION		
Concrete paving.....		7
Grading and culverts.....		34
Grading and hot mix paving.....	} 58 structures included	95
Hot mix paving.....		20
Structures.....		11
Miscellaneous.....		69
TOTAL.....		236
GRAND TOTAL — MAINTENANCE, CONSTRUCTION.....		435

**APPENDIX No. 1**  
**BRIDGES COMPLETED DURING 1966**  
 (Appendix Discontinued)

**APPENDIX No. 2**

**Department Expenditures on King's Highways, Secondary Highways, Tertiary Roads,  
 Access and Industrial Roads, Connecting Links, Development Roads, Roads in  
 Unincorporated Townships, by County and District**

**April 1, 1966 to March 31, 1967**

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>BRANT:</b>			
Highway 2...	\$ 152,060.14	\$ 111,905.73	\$ 263,965.87
" 5 .....	250.18	46,527.85	46,778.03
" 24 .....	252,920.08	46,236.69	299,156.77
" 24A .....	457,832.81	59,154.39	516,987.20
" 53 .....	21,921.81	65,247.06	87,168.87
" 54 .....	32,826.34	60,502.37	93,328.71
" 99 .....	105,599.00	15,680.71	121,279.71
" 403 .....	870,825.67	18,172.98	888,998.65
Connecting Links:			
City of Brantford.....	134,844.38	—	134,844.38
Town of Paris.....	250,139.20	—	250,139.20
Development Roads.....	32,275.93	11,190.65	43,466.58
Lands and Buildings	126.22	204.75	330.97
	<u>\$2,311,621.76</u>	<u>\$ 434,823.18</u>	<u>\$2,746,444.94</u>
<b>BRUCE:</b>			
Highway 4 .....	\$ 102,780.73	\$ 79,023.07	\$ 181,803.80
" 6 .....	313,472.60	154,102.57	467,575.17
" 9 .....	9,896.13	80,740.61	90,636.74
" 21 .....	19,606.50	154,279.35	173,885.85
" 70 .....	1,690.21	—	1,690.21
" 86 .....	2,889.11	28,740.49	31,629.60
Connecting Links:			
Town of Kincardine	—	1,392.62	1,392.62
Town of Port Elgin	—	1,233.76	1,233.76
Town of Southampton	—	1,910.84	1,910.84
Town of Walkerton	—	1,286.54	1,286.54
Town of Wiarton.....	—	1,306.01	1,306.01
Village of Lucknow	—	1,608.46	1,608.46
Village of Mildmay	—	51.48	51.48
Village of Teeswater	—	213.65	213.65
Development Roads	567,816.51	889.20	568,705.71
Lands and Buildings	1,351.91	1,280.46	2,632.37
	<u>\$1,019,503.70</u>	<u>\$ 508,059.11</u>	<u>\$1,527,562.81</u>



COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>CARLETON</b>			
Highway 7.....	\$1,276,617.03	\$ 63,976.08	\$1,340,593.11
"    16.....	141,012.46	70,850.70	211,863.16
"    17.....	893,362.91	172,641.64	1,066,004.55
"    29.....	726.26	8,786.74	9,513.00
"    31.....	244,007.76	63,936.01	307,943.77
"    44.....	15,797.94	12,984.06	28,782.00
"    416.....	10,991.49	—	10,991.49
"    417.....	4,832.32	—	4,832.32
Special Agreements:			
Ottawa Queensway.....	2,843,300.62	2,561.12	2,845,861.74
Macdonald-Cartier Bridge.....	Cr. 67,903.39	—	Cr. 67,903.39
Sidewalks:			
Township of Fitzroy.....	528.00	—	528.00
Township of Nepean.....	4,414.52	—	4,414.52
Connecting Link:			
City of Ottawa.....	571,973.42	—	571,973.42
Development Roads.....	446,385.60	10,531.79	456,917.39
Lands and Buildings.....	37,335.62	16,014.69	53,350.31
Miscellaneous Surveys.....	1,228.98	—	1,228.98
	<u>\$6,424,611.54</u>	<u>\$ 422,282.83</u>	<u>\$6,846,894.37</u>
<b>DUFFERIN:</b>			
Highway 9.....	\$ 5,159.78	\$ 58,656.38	\$ 63,816.16
"    10.....	36,498.91	74,560.63	111,059.54
"    24.....	1,907.44	34,793.58	36,701.02
"    89.....	3,075.40	49,733.74	52,809.14
"    104.....	675.40	6,747.41	7,422.81
"    136.....	178.37	1,903.17	2,081.54
Connecting Links:			
Town of Orangeville.....	2,844.58	1,586.37	4,430.95
Village of Shelburne.....	—	1,701.59	1,701.59
Development Roads.....	295,306.60	1,772.50	297,079.10
Lands and Buildings.....	1,769.65	451.54	2,221.19
	<u>\$ 347,416.13</u>	<u>\$ 231,906.91</u>	<u>\$ 579,323.04</u>
<b>ELGIN:</b>			
Highway 3.....	\$ 26,109.74	\$193,327.16	\$ 219,436.90
"    4.....	42,845.88	57,757.60	100,603.48
"    19.....	2,204.09	41,727.71	43,931.80
"    73.....	8,641.75	40,968.32	49,610.07
"    74.....	1,842.29	17,336.56	19,178.85
"    76.....	503.57	18,343.97	18,847.54
"    126.....	191.10	—	191.10
"    401 (M.-C.F.).....	383,362.75	134,727.06	518,089.81
Connecting Links:			
Town of Aylmer.....	109,519.54	9,269.04	118,788.53
Village of Belmont.....	1,372.44	599.10	1,971.54
Village of Port Burwell.....	—	3,116.98	3,116.98
Development Roads.....	135,778.64	18,118.45	153,897.09
Lands and Buildings.....	500.00	2,086.15	2,586.15
Miscellaneous Surveys.....	112.71	—	112.71
	<u>\$ 712,984.50</u>	<u>\$ 537,378.10</u>	<u>\$1,250,362.60</u>
<b>ESSEX:</b>			
Highway 2.....	\$ 70,317.33	\$ 101,940.34	\$ 172,257.67
"    3.....	47,993.52	89,049.22	137,042.74
"    3B.....	4,540.28	7,912.37	12,452.65
"    18.....	784,225.49	79,362.31	863,587.80
"    18A.....	1,720.41	31,617.43	33,337.84
"    39.....	99,440.55	23,756.61	123,197.16
"    77.....	866,218.59	22,137.44	888,356.03
"    98.....	5,934.17	51,691.16	57,625.33
"    107.....	25.95	3,161.43	3,187.38
"    114.....	28.54	1,322.03	1,350.57
"    401 (M.-C.F.).....	1,330,594.92	165,322.01	1,495,916.93

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>ESSEX (Cont'd)</b>			
Special Agreement:			
E. C. Row Boulevard (Windsor).....	35,155.20	—	35,155.20
Connecting Links:			
Town of Amherstburg.....	—	312.24	312.24
Town of Essex.....	—	989.75	989.75
Town of Harrow.....	—	235.08	235.08
Town of Kingsville.....	—	838.34	838.34
Town of Leamington.....	1,222.84	441.36	1,664.20
Village of Belle River.....	—	881.57	881.57
Village of Wheatley.....	49,352.03	—	49,352.03
Development Roads.....	—	12,457.75	12,457.75
Lands and Buildings.....	2,368.73	2,243.91	4,612.64
Miscellaneous Surveys.....	6,366.41	—	6,366.41
	<u>\$3,305,504.96</u>	<u>\$ 595,672.35</u>	<u>\$3,901,177.31</u>
<b>FRONTENAC:</b>			
Highway 2.....	\$ 112,101.87	\$ 75,412.78	\$ 187,514.65
" 7.....	22,363.67	72,564.16	94,927.83
" 15.....	13,360.58	62,858.07	76,218.65
" 33.....	1,987.10	17,132.55	19,119.65
" 38.....	40,640.04	118,555.40	159,195.44
" 41.....	96,375.11	32,446.06	128,821.17
" 95.....	—	28,775.90	28,775.90
" 96.....	24,812.29	72,375.23	97,187.52
" 401 (M.-C.F.).....	464,489.09	171,373.53	635,862.62
Sec. Hwy. 506.....	215,776.16	41,081.86	256,858.02
" 509.....	62,926.80	57,450.36	120,377.16
Sidewalk:			
Township of Kingston.....	1,866.50	—	1,866.50
Connecting Link:			
City of Kingston.....	64,474.78	—	64,474.78
Development Roads.....	1,070,740.41	15,589.60	1,086,330.01
Ferries.....	86,671.00	384,725.95	471,396.95
Lands and Buildings.....	266,252.25	22,348.97	288,601.22
Miscellaneous Surveys.....	1,159.59	—	1,159.59
	<u>\$2,545,997.24</u>	<u>\$1,172,690.42</u>	<u>\$3,718,687.66</u>
<b>GREY:</b>			
Highway 4.....	\$ 249,850.30	\$ 99,240.42	\$ 349,090.72
" 6.....	329,141.06	180,914.80	510,055.86
" 10.....	28,895.61	109,659.89	138,555.50
" 24.....	24.36	8,562.52	8,586.88
" 26.....	198,049.81	108,403.17	306,452.98
" 70.....	156,596.61	23,140.31	179,736.92
" 89.....	2,928.98	29,708.74	32,637.72
Connecting Links:			
City of Owen Sound.....	57,055.80	—	57,055.80
Town of Durham.....	—	2,304.05	2,304.05
Town of Hanover.....	69,646.42	972.04	70,618.46
Town of Meaford.....	246,284.03	2,655.91	248,939.94
Town of Thornbury.....	105,996.58	1,024.58	107,021.16
Village of Chatsworth.....	—	782.57	782.57
Village of Flesherton.....	—	348.69	348.69
Village of Markdale.....	—	382.89	382.89
Development Roads.....	507,303.85	1,839.83	509,143.68
Lands and Buildings.....	91,884.34	4,660.54	96,544.88
Miscellaneous Surveys.....	419.10	—	419.10
	<u>\$2,044,076.85</u>	<u>\$ 574,600.95</u>	<u>\$2,618,677.80</u>
<b>HALDIMAND:</b>			
Highway 3.....	\$ 53,232.61	\$ 188,040.61	\$ 241,273.22
" 6.....	24,193.01	73,565.95	97,758.96
" 54.....	49.79	51,562.91	51,612.70
" 56.....	188.43	24,303.49	24,491.92

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>HALDIMAND (Cont'd)</b>			
Connecting Links:			
Town of Caledonia.....	—	2,851.43	2,851.43
Town of Dunnville.....	—	2,672.18	2,672.18
Village of Cayuga.....	—	1,961.96	1,961.96
Village of Hagersville.....	—	1,757.04	1,757.04
Village of Jarvis.....	—	1,244.30	1,244.30
Development Roads.....	205,662.41	—	205,662.41
Weigh Scales.....	—	983.09	983.09
Miscellaneous Surveys.....	994.74	—	994.74
	<u>\$ 284,320.99</u>	<u>\$ 348,942.96</u>	<u>\$ 633,263.95</u>
<b>HALTON:</b>			
Highway 2.....	\$ 29,295.15	\$ 115,974.59	\$ 144,369.74
" 5.....	16,883.99	77,312.29	94,196.28
" 6.....	—	7,423.33	7,423.33
" 7.....	6,578.43	54,638.51	61,216.94
" 25.....	19,991.71	80,724.49	100,716.20
" 122.....	12,063.31	24,740.01	36,803.32
" 401 (M.-C.F.).....	38,113.47	152,598.63	190,712.10
" 403.....	171,223.76	76,727.85	247,951.61
Queen Elizabeth Way.....	254,690.52	255,720.74	510,411.26
Special Agreement:			
Beach Boulevard (Burlington).....	Cr. 122.21	—	Cr. 122.21
Connecting Links:			
Town of Acton.....	13,109.72	3,293.71	16,403.43
Town of Georgetown.....	255,375.04	5,076.71	260,451.75
Town of Milton.....	64,561.55	2,974.83	67,536.38
Town of Oakville.....	50,395.32	—	50,395.32
Lands and Buildings.....	1,994.85	11,203.58	13,198.43
	<u>\$ 934,154.61</u>	<u>\$ 867,509.27</u>	<u>\$1,801,663.88</u>
<b>HASTINGS:</b>			
Highway 2.....	\$ 32,607.24	\$ 101,287.66	\$ 133,894.90
" 7.....	176,693.14	93,775.60	270,468.74
" 14.....	52,003.47	76,900.89	128,904.36
" 28.....	3,613.51	27,759.63	31,373.14
" 33.....	38,434.54	29,540.41	67,974.95
" 37.....	75,937.28	84,700.25	160,637.53
" 49.....	166,833.18	3,847.53	170,680.71
" 62.....	495,759.22	240,449.40	736,208.62
" 121.....	—	4,122.28	4,122.28
" 127.....	19,202.36	26,152.90	45,355.26
" 401 (M.-C.F.).....	191,501.06	177,548.24	369,049.30
Sec. Hwy. 500.....	29,237.34	59,931.05	89,168.39
" " 502.....	1,217.94	5,870.58	7,088.52
" " 504.....	866.15	530.11	1,396.26
" " 517.....	—	8,002.33	8,002.33
" " 620.....	46,041.94	31,465.20	77,507.14
Sidewalks:			
Township of Tyendinaga.....	256.94	—	256.94
Township of Monteaegle.....	167.63	—	167.63
Connecting Links:			
City of Belleville.....	223,893.92	—	223,893.92
Town of Deseronto.....	—	358.26	358.26
Town of Trenton.....	647,463.38	—	647,463.38
Village of Bancroft.....	90,746.15	2,287.73	93,033.88
Village of Frankford.....	—	105.05	105.05
Village of Madoc.....	18,699.26	1,052.44	19,751.70
Village of Marmora.....	—	1,997.51	1,997.51
Village of Stirling.....	—	795.90	795.90
Village of Tweed.....	—	440.95	440.95
Development Roads.....	846,603.26	28,814.80	875,418.06
Lands and Buildings.....	134,395.42	11,056.50	145,451.92
Miscellaneous Surveys.....	448.30	—	448.30
	<u>\$3,292,622.63</u>	<u>\$1,018,793.20</u>	<u>\$4,311,415.83</u>

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>HURON:</b>			
Highway 4	\$ 177,887.14	\$ 165,717.51	\$ 343,604.65
" 8	16,978.01	106,716.94	123,694.95
" 9	—	3,764.32	3,764.32
" 21	33,832.33	148,997.20	182,829.53
" 23	1,369.58	11,617.76	12,987.34
" 81	5,966.38	15,138.15	21,104.53
" 83	33,725.27	64,348.55	98,073.82
" 84	8,557.48	31,307.73	39,865.21
" 86	10,739.96	224,537.38	235,277.34
" 87	5,556.04	42,978.76	48,534.80
<b>Sidewalks:</b>			
Township of Ashfield	611.25	—	611.25
Township of Stephen	1,435.84	—	1,435.84
Township of Tuckersmith	369.02	—	369.02
Township of West Wawanosh	375.00	—	375.00
<b>Connecting Links:</b>			
Town of Clinton	195,905.58	2,189.13	198,094.71
Town of Exeter	8,731.07	1,945.31	10,676.38
Town of Goderich	186,518.40	1,225.23	187,743.63
Town of Seaforth	—	460.19	460.19
Town of Wingham	279,565.87	3,152.68	282,718.55
Development Roads	597,711.33	42,663.50	640,374.83
Lands and Buildings	958.21	2,081.03	3,039.24
	<u>\$1,566,793.76</u>	<u>\$ 868,841.37</u>	<u>\$2,435,635.13</u>
<b>KENT:</b>			
Highway 2	\$ 27,923.57	\$ 110,243.72	\$ 138,167.29
" 3	263,568.12	108,106.57	371,674.69
" 21	2,351.84	67,429.22	69,781.06
" 40	4,934.28	45,166.22	50,100.50
" 78	7,827.08	16,092.45	23,919.53
" 79	228,961.10	9,995.96	238,957.06
" 98	761.57	77,973.92	78,735.49
" 401 (M.-C.F.)	173,423.19	157,783.74	331,206.93
<b>Sidewalk:</b>			
Township of Tilbury East	840.29	—	840.29
<b>Connecting Links:</b>			
Town of Blenheim	337.92	638.73	976.65
Town of Bothwell	—	476.47	476.47
Town of Dresden	10,150.53	1,680.12	11,830.65
Town of Ridgetown	—	695.13	695.13
Town of Tilbury	—	265.15	265.15
Town of Wallaceburg	10,761.21	3,682.36	14,443.57
Village of Thamesville	—	761.83	761.83
Village of Wheatley	—	284.35	284.35
Development Roads	332,428.57	—	332,428.57
Lands and Buildings	4 421.33	8,319.25	12,740.58
Weigh Scales	667.56	—	667.56
	<u>\$1,069,358.16</u>	<u>\$ 609,595.19</u>	<u>\$1,678,953.35</u>
<b>LAMBTON:</b>			
Highway 7	\$ 24,416.87	\$ 139,848.73	\$ 164,265.60
" 21	64,279.56	107,871.76	172,151.32
" 22	228.10	4,597.01	4,825.11
" 40	168,226.94	81,027.63	249,254.57
" 40A	9,589.59	—	9,589.59
" 40C	5.19	312.57	317.76
" 79	2,135.64	83,142.55	85,278.19
" 80	3,210.21	74,241.98	77,452.19
" 81	202.13	22.09	224.22
" 82	293.63	15,521.34	15,814.97
" 402	299,463.40	37,228.19	336,691.59



COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>LAMBTON (Cont'd)</b>			
Connecting Links:			
City of Sarnia.....	30,033.70	—	30,033.70
Town of Forest.....	—	542.28	542.28
Village of Grand Bend.....	—	2,721.00	2,721.00
Village of Thedford.....	—	1,220.07	1,220.07
Village of Watford.....	—	424.46	424.46
Village of Wyoming.....	—	693.11	693.11
Development Roads.....	212,289.79	6,820.15	219,109.94
Lands and Buildings.....	50,555.89	1,726.43	52,282.32
Weigh Scales.....	936.85	—	936.85
Miscellaneous Surveys.....	4,649.10	—	4,649.10
	<u>\$ 870,516.59</u>	<u>\$ 557,961.35</u>	<u>\$1,428,477.94</u>
<b>LANARK:</b>			
Highway 7.....	\$ 133,088.81	\$ 130,962.59	\$ 264,051.40
“ 15.....	886.29	47,398.56	48,284.85
“ 29.....	83,495.55	41,141.53	124,637.08
“ 43.....	68,884.20	71,451.71	140,335.91
“ 44.....	32,728.98	4,197.50	36,926.48
Sec. Hwy. 511.....	149.15	17,481.77	17,630.92
Sidewalk:			
Township of Bathurst.....	639.25	—	639.25
Connecting Links:			
Town of Almonte.....	142,014.83	1,228.98	143,243.81
Town of Perth.....	390,248.06	—	390,248.06
Town of Smiths Falls.....	29,524.15	—	29,524.15
Development Roads.....	1,054,725.65	5,877.05	1,060,602.70
Lands and Buildings.....	858.99	3,275.03	4,134.02
Weigh Scales.....	—	3,142.07	3,142.07
	<u>\$1,937,243.91</u>	<u>\$ 326,156.79</u>	<u>\$2,263,400.70</u>
<b>LEEDS AND GRENVILLE</b>			
Highway 2.....	\$ 26,618.44	\$ 204,953.30	\$ 231,571.74
“ 15.....	10,501.62	123,104.63	133,606.25
“ 16.....	23,842.24	61,089.73	84,931.97
“ 29.....	2,938.54	80,969.23	83,907.77
“ 32.....	—	41,905.62	41,905.62
“ 42.....	39,835.38	81,977.79	121,813.17
“ 43.....	15,313.45	42,392.81	57,706.26
“ 137.....	331.06	5,027.89	5,358.95
“ 401 (M.-C.F.).....	6,482,713.52	280,254.22	6,762,967.74
“ 416.....	1,839.29	—	1,839.29
Connecting Links:			
City of Brockville.....	39,402.01	—	39,402.01
Town of Gananoque.....	2,252.52	—	2,252.52
Town of Kemptville.....	521.97	269.18	791.15
Village of Athens.....	3,296.81	684.95	3,981.76
Village of Merrickville.....	—	1,063.86	1,063.86
Village of Westport.....	3,867.60	607.28	4,474.88
Development Roads.....	594,510.01	11,969.20	606,479.21
Lands and Buildings.....	45,162.54	3,388.61	48,551.15
Weigh Scales.....	993.85	1,197.51	2,191.36
Miscellaneous Surveys.....	660.78	—	660.78
	<u>\$7,294,601.63</u>	<u>\$ 940,855.81</u>	<u>\$8,235,457.44</u>
<b>LENNOX AND ADDINGTON:</b>			
Highway 2.....	\$ 2,101.51	\$ 79,682.05	\$ 81,783.56
“ 7.....	580.69	33,722.80	34,303.49
“ 33.....	13,293.45	79,188.24	92,481.69
“ 41.....	88,627.77	186,597.91	275,225.68
“ 133.....	617,595.36	13,924.21	631,519.57
“ 401 (M.-C.F.).....	34,615.75	160,613.94	195,229.69
Sec. Hwy. 500.....	1,935.68	13,035.48	14,971.16
“ 502.....	2,528.74	14,566.29	17,095.03

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>ENNOX AND ADDINGTON (Cont'd)</b>			
Connecting Links:			
Town of Napanee.....	—	626.24	626.24
Village of Bath.....	—	592.22	592.22
Development Roads.....	903,317.07	3,418.20	906,735.27
Ferries.....	—	103,182.42	103,182.42
Lands and Buildings.....	4,668.87	1,373.41	6,042.28
Miscellaneous Surveys.....	157.30	—	157.30
	<u>\$1,669,422.19</u>	<u>\$ 690,523.41</u>	<u>\$2,359,945.60</u>

<b>INCOLN</b>			
Highway 8.....	\$ 522,737.35	\$ 120,010.92	\$ 642,748.27
" 8A.....	1,058.00	14,085.90	15,143.90
" 20.....	2,481.94	103,778.66	106,260.60
" 57.....	—	9,917.32	9,917.32
" 58.....	408.95	—	408.95
" 405.....	3,969.62	40,324.81	44,294.43
" 406.....	142,808.77	27,414.85	170,223.62
Queen Elizabeth Way.....	2,070,692.45	348,147.62	2,418,840.07
Special Agreement:			
Carleton St. Tunnel (St. Catharines).....	272,810.35	—	272,810.35
Connecting Links:			
City of St. Catharines.....	473,244.94	—	473,244.94
Town of Beamsville.....	4,225.65	1,276.82	5,502.47
Town of Grimsby.....	—	927.86	927.86
Development Roads.....	56,400.02	—	56,400.02
Lands and Buildings.....	1,666.63	4,984.10	6,650.73
Miscellaneous Surveys.....	5,150.63	—	5,150.63
	<u>\$3,557,655.30</u>	<u>\$ 670,868.86</u>	<u>\$4,228,524.16</u>

<b>MIDDLESEX:</b>			
Highway 2.....	\$ 17,510.70	\$ 165,884.70	\$ 183,395.40
" 4.....	646,480.22	163 183.90	809,664.12
" 7.....	77,288.75	96,377.02	173,665.77
" 22.....	26,878.90	54,336.35	81,215.25
" 23.....	3,630.87	21,084.07	24,714.94
" 73.....	1,244.35	12,438.95	13,683.30
" 74.....	30,588.69	14,974.19	45,562.88
" 76.....	9.83	2,059.89	2,069.72
" 80.....	3,782.60	19,615.45	23,398.05
" 81.....	918,314.79	86,960.05	1,005,274.84
" 126.....	419,742.01	17,494.13	437,236.14
" 135.....	32.13	15,433.25	15,465.38
" 401 (M.-C.F.).....	287,649.86	153,550.55	441,200.41
" 402.....	2,699.72	—	2,699.72
Connecting Links:			
City of London.....	213,866.87	24.36	213,891.23
Town of Parkhill.....	—	1,011.22	1,011.22
Town of Strathroy.....	287,864.55	576.93	288,441.48
Village of Glencoe.....	2,935.88	130.14	3,066.02
Village of Lucan.....	—	1,281.86	1,281.86
Development Roads.....	30,964.94	1,928.00	32,892.94
Lands and Buildings.....	39,346.69	13,353.53	52,700.22
Weigh Scales.....	—	7,376.53	7,376.53
Miscellaneous Surveys.....	4,701.09	—	4,701.09
	<u>\$3,015,533.44</u>	<u>\$ 849,075.07</u>	<u>\$3,864,608.51</u>

<b>NORFOLK:</b>			
Highway 3.....	\$ 213,073.75	\$ 89,133.25	\$ 302,207.00
" 6.....	261,176.21	10,211.96	271,388.17
" 19.....	435.24	6,741.86	7,177.10
" 24.....	509,140.62	75,206.78	584,347.40
" 24A.....	509,802.54	13,800.91	523,603.45
" 59.....	13,520.24	62,302.47	75,822.71

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
NORFOLK (Cont'd)			
Connecting Links:			
Town of Delhi.....	28,799.25	1,209.68	30,008.93
Town of Port Dover.....	29,040.59	723.04	29,763.63
Town of Simcoe.....	172,315.62	1,310.72	173,626.34
Development Roads.....	390,573.34	2,700.00	393,273.34
Lands and Buildings.....	6,601.44	5,724.92	12,326.36
Miscellaneous Surveys.....	122.27	—	122.27
	<u>\$2,134,601.11</u>	<u>\$ 269,065.59</u>	<u>\$2,403,666.70</u>

## NORTHUMBERLAND AND DURHAM

Highway 2.....	\$ 268,666.52	\$ 245,421.93	\$ 514,088.45
" 7.....	88.08	6,495.25	6,583.33
" 7A.....	17,033.16	68,124.87	85,158.03
" 28.....	184,808.02	115,021.11	299,829.13
" 30.....	60,980.26	90,205.21	151,185.47
" 33.....	57,541.31	17,003.97	74,545.28
" 35.....	57,631.99	87,283.07	144,915.06
" 45.....	30,764.24	89,488.36	120,252.60
" 106.....	47.13	11,101.23	11,148.36
" 115.....	21,578.29	71,112.31	92,690.60
" 401 (M.-C.F.).....	609,777.04	605,797.30	1,215,574.34
Sidewalks:			
Township of Alnwick.....	556.19	—	556.19
Township of Clarke.....	432.50	—	432.50
Township of Monaghan South.....	525.00	—	525.00
Connecting Links:			
Town of Bowmanville.....	—	557.14	557.14
Town of Campbellford.....	—	285.52	285.52
Town of Cobourg.....	93,058.43	421.95	93,480.38
Town of Port Hope.....	126,818.11	4,251.31	131,069.42
Village of Brighton.....	34,642.87	446.03	35,088.90
Village of Colborne.....	10,388.07	603.58	10,991.65
Village of Hastings.....	—	492.23	492.23
Village of Newcastle.....	—	830.19	830.19
Development Roads.....	763,737.98	—	763,737.98
Lands and Buildings.....	7,524.36	13,701.48	21,225.84
Weigh Scales.....	850.50	—	850.50
Miscellaneous Surveys.....	20,623.88	—	20,623.88
	<u>\$2,368,073.93</u>	<u>\$1,428,644.04</u>	<u>\$3,796,717.97</u>

## ONTARIO:

Highway 2.....	\$2,234,679.68	\$ 70,411.32	\$2,305,091.00
" 7.....	68,421.32	266,912.05	335,333.37
" 7A.....	2,244.57	48,746.86	50,991.43
" 12.....	379,807.39	227,445.02	607,252.41
" 47.....	50,444.28	85,907.75	136,352.03
" 48.....	502,805.63	93,993.95	596,799.58
" 69.....	6,627.22	86,143.96	92,771.18
" 401 (M.-C.F.).....	286,860.57	276,936.16	563,796.73
" 407.....	32.23	—	32.23
Sec. Hwy. 503.....	—	3,207.59	3,207.59
Connecting Links:			
City of Oshawa.....	321,040.40	—	321,040.40
Town of Uxbridge.....	—	850.23	850.23
Town of Whitby.....	46,058.90	1,355.36	47,414.26
Village of Beaverton.....	76,649.08	2,392.19	79,041.27
Development Roads.....	568,001.21	3,342.25	571,343.46
Lands and Buildings.....	33,466.74	961.76	34,428.50
	<u>\$4,577,139.22</u>	<u>\$1,168,606.45</u>	<u>\$5,745,745.67</u>

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>OXFORD</b>			
Highway 2	\$ 37,583.24	\$ 224,580.68	\$ 262,163.92
" 3	6,052.10	8,798.56	14,850.66
" 7	5,074.76	—	5,074.76
" 19	34,933.47	89,654.72	124,588.19
" 53	455,008.22	15,908.14	470,916.36
" 59	193,262.57	96,332.26	289,594.83
" 97	152,794.03	55,425.65	208,219.68
" 401 (M.-C.F.)	18,999.17	204,739.00	223,738.17
" 403	3,091.24	—	3,091.24
<b>Sidewalks:</b>			
Township of Dereham	537.50	—	537.50
Township of Zorra, East	56.75	—	56.75
<b>Connecting Links:</b>			
City of Woodstock	268,893.26	13,171.75	282,065.01
Town of Ingersoll	85,580.28	—	85,580.28
Town of Tillsonburg	76,333.65	—	76,333.65
Village of Norwich	—	1,507.26	1,507.26
Village of Tavistock	—	1,390.16	1,390.16
Development Roads	124,274.64	626.50	124,901.14
Lands and Buildings	30,560.08	795.73	31,355.81
Miscellaneous Surveys	46.04	—	46.04
	<u>\$1,493,081.00</u>	<u>\$ 712,930.41</u>	<u>\$2,206,011.41</u>

<b>EEL:</b>			
Highway 2	\$ 101,764.08	\$ 77,999.99	\$ 179,764.07
" 5	13,960.04	112,422.24	126,382.28
" 7	79,246.70	70,562.46	149,809.16
" 9	6,288.00	37,685.32	43,973.32
" 10	786,155.13	234,055.80	1,020,210.93
" 24	12,701.12	26,539.61	39,240.73
" 27	402,535.21	—	402,535.21
" 50	64,014.91	95,363.34	159,378.25
" 122	1,383,486.62	22,676.51	1,406,163.13
" 136	21,534.65	35,898.05	57,432.70
" 401 (M.-C.F.)	12,521.40	177,358.87	189,880.27
" 403	104,261.90	—	104,261.90
Queen Elizabeth Way	2,385,919.26	155,226.24	2,541,145.50
<b>Special Agreements:</b>			
Dixon Road (Toronto)	345.93	—	345.93
International Airport Road (Toronto)	—	5,163.62	5,163.62
<b>Sidewalks:</b>			
Township of Chinguacousy	1,001.23	—	1,001.23
Township of Toronto	28,973.09	—	28,973.09
<b>Connecting Links:</b>			
Town of Brampton	282,774.07	6,925.29	289,699.36
Town of Port Credit	20,284.51	12,539.37	32,823.88
Village of Bolton	—	3,828.08	3,828.08
Development Roads	441,975.88	—	441,975.88
Lands and Buildings	37,180.03	428.69	37,608.72
Miscellaneous Surveys	2,719.10	—	2,719.10
	<u>\$6,189,642.86</u>	<u>\$1,074,673.48</u>	<u>\$7,264,316.34</u>

<b>ERTH:</b>			
Highway 7	\$ 176,501.77	\$ 121,382.31	\$ 297,884.08
" 8	220,182.01	63,296.38	283,478.39
" 19	4,285.88	69,835.20	74,121.08
" 23	734,123.36	141,615.71	875,739.07
" 59	223.37	11,179.41	11,402.78
" 83	1,642.04	9,567.59	11,209.63
" 86	98,026.90	55,887.65	153,914.55



COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>PERTH (Cont'd)</b>			
Connecting Links:			
City of Stratford.....	—	48.84	48.84
Town of Listowel.....	—	1,620.46	1,620.46
Town of Mitchell.....	279.47	3,873.64	4,153.11
Town of St. Marys.....	112,290.79	343.40	112,634.19
Village of Milverton.....	—	21.51	21.51
Development Roads.....	3,256.80	—	3,256.80
Lands and Buildings.....	190.63	4,144.49	4,335.12
	<u>\$1,351,003.02</u>	<u>\$ 482,816.59</u>	<u>\$1,833,819.61</u>
<b>PETERBOROUGH:</b>			
Highway 7.....	\$ 115,574.09	\$ 122,916.13	\$ 238,490.22
“ 28.....	867,929.73	236,004.70	1,103,934.43
“ 30.....	2,551.94	8,692.14	11,244.08
“ 36.....	30,243.43	41,543.39	71,786.82
“ 45.....	10,146.97	14,028.69	24,175.66
“ 115.....	1,274.25	2,918.05	4,192.30
“ 121.....	535.69	6,966.87	7,502.56
Sec. Hwy. 503.....	2,295.53	11,886.15	14,181.68
“ “ 504.....	69,725.06	42,418.41	112,143.47
“ “ 507.....	163,702.48	120,932.77	284,635.25
“ “ 620.....	94,560.33	36,452.93	131,013.26
“ “ 620A.....	1,514.00	371.04	1,885.04
“ “ 649.....	1,583.80	6,026.01	7,609.81
Connecting Links:			
City of Peterborough.....	29,484.93	—	29,484.93
Village of Lakefield.....	—	814.13	814.13
Village of Norwood.....	—	404.37	404.37
Development Roads.....	1,036,621.47	—	1,036,621.47
Lands and Buildings.....	1,394.69	1,869.60	3,264.29
Miscellaneous Surveys.....	93.68	—	93.68
	<u>\$2,429,232.07</u>	<u>\$ 654,245.38</u>	<u>\$3,083,477.45</u>
<b>PRESCOTT AND RUSSELL:</b>			
Highway 17.....	\$ 46,405.15	\$ 558,769.64	\$ 605,174.79
“ 34.....	21.88	25,757.90	25,779.78
“ 417.....	45,218.27	—	45,218.27
Special Agreement:			
Perley Bridge (Hawkesbury).....	—	5,529.52	5,529.52
Sidewalks:			
Township of Clarence.....	2,802.43	—	2,802.43
Township of Hawkesbury East.....	631.50	—	631.50
Township of Plantagenet North.....	236.25	—	236.25
Connecting Links:			
Town of Hawkesbury.....	8,687.36	297.79	8,985.15
Town of Rockland.....	—	96.81	96.81
Town of Vankleek Hill.....	—	229.64	229.64
Development Roads.....	987,652.25	14,795.00	1,002,447.25
Lands and Buildings.....	45,137.62	3,178.32	48,315.94
Weigh Scales.....	—	3,625.53	3,625.53
Miscellaneous Surveys.....	961.48	—	961.48
	<u>\$1,137,754.19</u>	<u>\$ 612,280.15</u>	<u>\$1,750,034.34</u>
<b>PRINCE EDWARD:</b>			
Highway 14.....	\$ 4,226.07	\$ 52,714.97	\$ 56,941.04
“ 33.....	222,134.30	77,815.75	299,950.05
“ 49.....	338,006.82	27,207.51	365,214.33
Access Road:			
Sandbanks Provincial Park.....	2,806.91	—	2,806.91
Connecting Links:			
Town of Picton.....	15,055.85	204.93	15,260.78
Village of Bloomfield.....	11,329.85	1,118.28	12,448.13
Village of Wellington.....	—	853.31	853.31
Development Roads.....	339,902.34	22,775.35	362,677.69

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>PRINCE EDWARD (Cont'd)</b>			
Ferries.....	—	103,182.40	103,182.40
Lands and Buildings.....	428.87	706.12	1,134.99
Miscellaneous Surveys.....	147.54	—	147.54
	<u>\$ 934,038.55</u>	<u>\$ 286,578.62</u>	<u>\$1,220,617.17</u>
<b>RENFREW</b>			
Highway 17.....	\$2,030,085.29	\$ 361,788.05	\$2,391,873.34
“ 29.....	132.05	1,595.25	1,727.30
“ 41.....	425,042.54	170,652.14	595,694.68
“ 60.....	752,432.61	127,650.00	880,082.61
“ 62.....	71,566.23	140,258.77	211,825.00
“ 132.....	—	40,273.58	40,273.58
Sec. Hwy. 500.....	1,553.10	27,402.00	28,955.10
“ “ 508.....	264,398.55	76,934.21	341,332.76
“ “ 511.....	378.00	8,117.56	8,495.56
“ “ 512.....	84,675.63	69,978.79	154,654.42
“ “ 513.....	10,617.16	22,894.19	33,511.35
“ “ 515.....	71,603.82	75,547.51	147,151.33
“ “ 517.....	2,366.48	7,498.81	9,865.29
“ “ 521.....	16,359.04	31,242.36	47,601.40
“ “ 635.....	—	4,324.92	4,324.92
“ “ 653.....	149,255.39	16,469.83	165,725.22
Sidewalk:			
Township of Westmeath.....	1,056.68	—	1,056.68
Connecting Links:			
Town of Pembroke.....	—	20,024.13	20,024.13
Town of Renfrew.....	—	6,105.81	6,105.81
Village of Barry's Bay.....	—	601.52	601.52
Village of Eganville.....	—	451.05	451.05
Development Roads.....	1,300,460.01	—	1,300,460.01
Lands and Buildings.....	17,290.19	8,112.18	25,402.37
Weigh Scales.....	6,338.55	3,815.72	10,154.27
Miscellaneous Surveys.....	4,030.62	—	4,030.62
	<u>\$5,209,641.94</u>	<u>\$1,221,738.38</u>	<u>\$6,431,380.32</u>
<b>SIMCOE:</b>			
Highway 9.....	\$ 46,881.79	\$ 36,050.12	\$ 82,931.91
“ 11.....	397,073.59	366,618.76	763,692.35
“ 12.....	444,229.74	144,637.79	588,867.53
“ 24.....	9,872.20	44,511.10	54,383.30
“ 26.....	192,957.48	120,602.87	313,560.35
“ 27.....	211,335.16	223,552.80	434,887.96
“ 69.....	—	2,940.73	2,940.73
“ 88.....	267.92	19,545.30	19,813.22
“ 89.....	80,957.72	206,119.28	287,077.00
“ 90.....	209,508.17	43,437.83	252,946.00
“ 91.....	436,931.42	9,359.09	446,290.51
“ 92.....	1,421.40	53,855.13	55,276.53
“ 93.....	4,504.01	58,523.95	63,027.96
“ 103.....	1,674.03	95,985.22	97,659.25
“ 120.....	—	5,229.42	5,229.42
“ 400.....	289,841.35	474,564.30	764,405.65
Access Road:			
Ste. Marie Among the Hurons.....	Cr. 16,132.47	—	Cr. 16,132.47
Sidewalks:			
Township of Essa.....	2,828.34	—	2,828.34
Township of Tiny.....	303.26	—	303.26
Connecting Links:			
City of Barrie.....	92,737.35	—	92,737.35
Town of Alliston.....	121,124.95	4,482.01	125,606.96
Town of Bradford.....	—	9,495.33	9,495.33
Town of Collingwood.....	134,359.57	1,601.59	135,961.16
Town of Midland.....	—	2,701.70	2,701.70
Town of Orillia.....	67,827.81	12,654.50	80,482.31
Town of Penetang.....	—	4,518.47	4,518.47
Town of Stayner.....	34,728.21	1,476.65	36,204.86

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>SIMCOE (Cont'd)</b>			
Village of Coldwater.....	—	1,869.05	1,869.05
Village of Cookstown.....	85,533.18	4,083.20	89,616.38
Village of Elmvale.....	—	2,966.01	2,966.01
Village of Port McNicoll.....	—	1,282.82	1,282.82
Village of Victoria Harbour.....	—	3,690.28	3,690.28
Village of Wasaga Beach.....	—	789.84	789.84
Development Roads.....	730,895.35	3,860.65	734,756.00
Lands and Buildings.....	3,669.85	1,526.05	5,195.90
Miscellaneous Surveys.....	46.27	—	46.27
	<u>\$3,585,377.65</u>	<u>\$1,962,531.84</u>	<u>\$5,547,909.49</u>

**STORMONT, DUNDAS AND GLENGARRY:**

Highway 2.....	\$ 383,931.00	\$ 206,458.77	\$ 590,389.77
“ 31.....	61,862.90	72,478.10	134,341.00
“ 34.....	6,842.29	73,070.84	79,913.13
“ 43.....	52,596.50	169,291.47	221,887.97
“ 138.....	28,091.92	—	28,091.92
“ 401 (M.-C.F.).....	2,131,041.18	322,548.35	2,453,589.53
<b>Connecting Links:</b>			
City of Cornwall.....	64,045.88	—	64,045.88
Town of Alexandria.....	—	1,937.73	1,937.73
Village of Winchester.....	—	817.57	817.57
Development Roads.....	544,242.99	43,564.25	587,807.24
Lands and Buildings.....	14,193.59	5,238.54	19,432.13
Weigh Scales.....	116,398.54	1,476.01	117,874.55
Miscellaneous Surveys.....	1,416.48	—	1,416.48
	<u>\$3,404,663.27</u>	<u>\$ 896,881.63</u>	<u>\$4,301,544.90</u>

**VICTORIA:**

Highway 7.....	\$ 11,699.00	\$ 141,037.49	\$ 152,736.49
“ 35.....	22,883.85	113,336.14	136,219.99
“ 35A.....	—	3,775.11	3,775.11
“ 36.....	11,451.40	53,538.93	64,990.33
“ 46.....	382,462.95	80,636.34	463,099.29
“ 48.....	225.15	11,007.74	11,232.89
“ 121.....	22,901.23	56,826.45	79,727.68
Sec. Hwy. 503.....	257,835.26	117,242.70	375,077.96
“ 505.....	33,813.06	29,811.16	63,624.22
“ 649.....	1,910.48	18,533.92	20,444.40
<b>Connecting Links:</b>			
Town of Lindsay.....	270,253.09	5,805.65	276,058.74
Village of Bobcaygeon.....	—	2,528.45	2,528.45
Village of Fenelon Falls.....	139,499.76	558.91	140,058.67
Village of Omemee.....	6,189.20	773.50	6,962.70
Development Roads.....	626,369.87	18,108.90	644,478.77
Lands and Buildings.....	32,156.57	1,356.53	33,513.10
	<u>\$1,819,650.87</u>	<u>\$ 654,877.92</u>	<u>\$2,474,528.79</u>

**WATERLOO:**

Highway 7.....	\$ 23,490.78	\$ 299,407.78	\$ 322,898.56
“ 8.....	5,471,108.74	37,092.72	5,508,201.46
“ 24.....	44,983.61	26,614.80	71,598.41
“ 24A.....	2,256.50	11,672.66	13,929.16
“ 85.....	18,564.58	27,576.30	46,140.88
“ 86.....	136,612.92	42,377.39	178,990.31
“ 97.....	15,624.28	39,116.40	54,740.68
“ 401 (M.-C.F.).....	2,435.85	109,579.41	112,015.26
<b>Sidewalks:</b>			
Township of Waterloo.....	677.16	—	677.16
Township of Wilmot.....	1,723.16	—	1,723.16

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>WATERLOO (Cont'd)</b>			
Connecting Links:			
City of Galt.....	230,621.12	5,156.18	235,777.30
City of Kitchener.....	—	983.84	983.84
City of Waterloo.....	21,101.75	—	21,101.75
Town of Elmira.....	36.79	3,150.49	3,187.28
Town of Hespeler.....	6,598.74	1,453.64	8,052.38
Town of New Hamburg	—	405.70	405.70
Town of Preston	50,513.56	8,049.61	58,563.17
Lands and Buildings	274.00	739.81	1,013.81
Miscellaneous Surveys	2,831.76	—	2,831.76
	<u>\$6,029,455.30</u>	<u>\$ 613,376.73</u>	<u>\$6,642,832.03</u>

<b>WATERLOO (Cont'd)</b>			
Highway 3.....	\$ 896,678.71	\$ 143,773.64	\$1,040,452.35
"    3A.....	3,315.52	51,812.13	55,127.65
"    3C.....	113.31	41,746.75	41,860.06
"    8.....	26,839.51	15,342.27	42,181.78
"    20.....	139,625.78	54,184.54	193,810.32
"    57.....	—	18,766.79	18,766.79
"    58.....	8,350,490.79	65,311.95	8,415,802.74
"    405.....	2,084.25	7,489.06	9,573.31
"    406.....	203,660.31	—	203,660.31
Queen Elizabeth Way.....	658,455.92	237,619.79	896,075.71
Special Agreement:			
Rainbow Bridge Plaza...	726,089.99	—	726,089.99
Sidewalk:			
Township of Pelham...	1,027.48	—	1,027.48
Connecting Links:			
City of Niagara Falls.....	337,364.22	—	337,364.22
City of Port Colborne.....	48,020.10	—	48,020.10
Town of Fort Erie.....	234,501.05	802.00	235,303.05
Development Roads.....	8,394.94	—	8,394.94
Lands and Buildings	19,391.08	748.23	20,139.31
Weigh Scales.....	—	1,320.00	1,320.00
Miscellaneous Surveys...	10,791.99	—	10,791.99
	<u>\$11,666,844.95</u>	<u>\$ 638,917.15</u>	<u>\$12,305,762.10</u>

<b>WATERLOO (Cont'd)</b>			
Highway 6.....	\$ 127,196.82	\$ 151,417.91	\$ 278,614.73
"    7.....	32,790.79	44,681.12	77,471.91
"    9.....	22,450.94	104,315.22	126,766.16
"    23.....	263.02	7,093.63	7,356.65
"    24.....	25,082.94	69,628.76	94,711.70
"    25.....	5,701.69	26,547.57	32,249.26
"    86.....	346,548.14	36,923.34	383,471.48
"    87.....	2,226.21	14,272.10	16,498.31
"    89.....	21,910.30	58,865.84	80,776.14
"    401 (M.-C.F.).....	16,389.89	128,081.30	144,471.19
Connecting Links:			
City of Guelph.....	595,897.62	889.51	596,787.13
Town of Fergus.....	23,033.25	1,184.84	24,218.09
Town of Harriston.....	6,843.48	3,078.29	9,921.77
Town of Mount Forest.....	—	4,664.56	4,664.56
Town of Palmerston.....	—	630.64	630.64
Village of Arthur.....	—	527.77	527.77
Village of Clifford.....	—	598.66	598.66
Village of Erin.....	—	832.69	832.69
Development Roads.....	592,567.55	30,271.50	622,839.05
Lands and Buildings	21,568.05	2,675.69	24,243.74
	<u>\$1,840,470.69</u>	<u>\$ 687,180.94</u>	<u>\$2,527,651.63</u>

**ELLINGTON:**



COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>WENTWORTH:</b>			
Highway 2.....	\$ 108,542.92	\$ 84,779.71	\$ 193,322.63
“ 5.....	90,719.50	103,994.02	194,713.52
“ 6.....	268,561.32	106,339.31	374,900.63
“ 8.....	163,927.00	107,072.17	270,999.17
“ 20.....	7,607.27	52,212.07	59,819.34
“ 52.....	25,652.86	61,807.83	87,460.69
“ 53.....	1,138.67	31,524.15	32,662.82
“ 56.....	834.99	33,537.17	34,372.16
“ 97.....	2,252.79	58,465.39	60,718.18
“ 99.....	22,091.44	55,390.37	77,481.81
“ 403.....	2,171,885.63	44,010.48	2,215,896.11
Queen Elizabeth Way.....	463,776.78	287,956.60	751,733.38
<b>Connecting Links:</b>			
City of Hamilton.....	404,484.59	53,404.32	457,888.91
Town of Dundas.....	722,115.68	—	722,115.68
Development Roads.....	—	25,538.35	25,538.35
Lands and Buildings.....	1,934.23	5,845.51	7,779.74
Miscellaneous Surveys.....	3,156.85	—	3,156.85
	<u>\$4,458,682.52</u>	<u>\$1,111,877.45</u>	<u>\$5,570,559.97</u>

**YORK:**

Highway 2.....	\$ 651.08	\$ 4,761.44	\$ 5,412.52
“ 2A.....	1,413.27	18,609.13	20,022.40
“ 5.....	1,258.43	4,819.20	6,077.63
“ 7.....	116,209.41	211,289.70	327,499.11
“ 9.....	498,944.09	49,987.45	548,931.54
“ 11.....	62,944.44	221,710.64	284,655.08
“ 27.....	2,659,712.66	219,016.13	2,878,728.79
“ 47.....	6,767.12	15,257.96	22,025.08
“ 48.....	61,130.66	206,210.52	267,341.18
“ 50.....	909.55	22,925.09	23,834.64
“ 117.....	72.63	6,721.29	6,793.92
“ 400.....	1,737,177.48	336,153.63	2,073,331.11
“ 401.....	26,267,945.08	920,043.84	27,187,988.92
“ 403.....	57,145.45	—	57,145.45
“ 404.....	66,267.41	—	66,267.41
“ 407.....	95,472.56	—	95,472.56
Queen Elizabeth Way.....	3,681,365.07	93,018.28	3,774,383.35
<b>Special Agreements:</b>			
Belfield Expressway.....	4,598.84	—	4,598.84
Toronto Queensway.....	Cr. 75.00	—	Cr. 75.00
Yonge St. (Toronto).....	906.40	—	906.40
Dixon Rd. (Toronto).....	548.98	—	548.98
International Airport Rd. (Toronto).....	14,672.78	35,168.39	49,841.17
<b>Sidewalks:</b>			
Township of Gwillimbury East.....	2,953.87	—	2,953.87
Township of Vaughan.....	21,960.35	—	21,960.35
<b>Connecting Links:</b>			
Town of Aurora.....	3,047.18	2,236.87	5,284.05
Town of Richmond Hill.....	5,256.26	1,060.66	6,316.92
Village of Markham.....	—	1,930.55	1,930.55
Village of Stouffville.....	—	5,121.05	5,121.05
Development Roads.....	Cr. 18,982.32	—	Cr. 18,982.32
Lands and Buildings.....	75,847.83	71,901.51	147,749.34
Miscellaneous Surveys.....	9,304.36	—	9,304.36
	<u>\$35,435,425.92</u>	<u>\$2,447,943.33</u>	<u>\$37,883,369.25</u>

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>ALGOMA:</b>			
Highway 17	\$2,296,465.16	\$1,031,673.70	\$3,328,138.86
"    101	1,448,556.44	62,293.37	1,510,849.81
"    108	4,748.24	97,397.60	102,145.84
"    129	522,026.94	245,373.83	767,400.77
Sec. Hwy. 538	10,285.64	9,259.86	19,545.50
"    546	51,163.31	72,283.34	123,446.65
"    547	46,738.60	4,085.82	50,824.42
"    548	62,979.32	110,134.63	173,113.95
"    550	94,472.21	27,068.47	121,540.68
"    552	8,410.57	33,643.86	42,054.43
"    553	—	62,072.15	62,072.15
"    554	25,343.41	21,789.38	47,132.79
"    555	15,179.52	19,593.42	34,772.94
"    556	510,441.01	76,170.59	586,611.60
"    557	18,644.96	36,932.13	55,577.09
"    561	88,579.02	50,496.56	139,075.58
"    563	42,557.23	10,020.26	52,577.49
"    565	456.53	2,835.33	3,291.86
"    631	980,227.93	126,393.72	1,106,621.65
"    638	48,184.62	77,649.71	125,834.33
"    639	19,548.34	8,318.55	27,866.89
"    651	572,615.60	1,083.80	573,699.40
<b>Access Roads:</b>			
Panel Mine Road	—	4,453.34	4,453.34
Denison Mine Road	—	6,978.14	6,978.14
Stanrock Mine Road	—	8,639.96	8,639.96
Milliken Mine Road	—	5,521.65	5,521.65
Algoma-Nordic Mine Road	—	5,823.80	5,823.80
Old Gardiner River Road	24,124.05	—	24,124.05
Point Deschenes Road	32,400.06	—	32,400.06
<b>Connecting Links:</b>			
Township of Michipicoten	—	550.67	550.67
City of Sault Ste. Marie	521,986.36	—	521,986.36
Town of Blind River	Cr. 2,049.80	1,843.69	Cr. 206.11
Town of Thessalon	43,941.91	1,623.68	45,565.59
<b>Unincorporated Township Roads:</b>			
Statute Labour Board	—	52,817.10	52,817.10
Local Road Board	—	42,708.66	42,708.66
Special-Settlers	37,551.15	539.73	38,090.88
Development Roads	95,457.98	—	95,457.98
Ferries	—	133,945.76	133,945.76
Lands and Buildings	144,430.30	23,157.45	167,587.75
Weigh Scales	3,940.30	—	3,940.30
Miscellaneous Surveys	1,197.07	—	1,197.07
	<u>\$7,770,603.98</u>	<u>\$2,475,173.71</u>	<u>\$10,245,777.69</u>

<b>COCHRANE:</b>			
Highway 11	\$ 396,984.61	\$ 996,768.71	\$1,393,753.32
"    67	182,814.13	70,704.46	253,518.59
"    101	389,736.48	217,794.12	607,530.60
"    144	82,468.30	—	82,468.30
Sec. Hwy. 572	15,240.11	17,178.64	32,418.75
"    574	169,327.37	85,875.59	255,202.96
"    575	7,810.28	5,405.04	13,215.32
"    576	732,411.74	26,322.90	758,734.64
"    577	81,977.07	41,217.58	123,194.65
"    578	115,908.13	21,812.16	137,720.29
"    579	48,451.32	74,979.06	123,430.38
"    581	5,868.07	7,395.06	13,263.13
"    583	131,075.99	126,746.63	257,822.62
"    610	77,221.64	26,961.71	104,183.35
"    626	6,059.02	27,883.44	33,942.46
"    629	4,449.49	25,153.65	29,603.14
"    631	—	12,341.76	12,341.76

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>COCHRANE (Cont'd)</b>			
" " 636.....	8.28	16,081.10	16,089.38
" " 652.....	39,748.76	10,945.83	50,694.59
" " 655.....	12,470.44	15,187.66	27,658.10
Tertiary Road 807.....	47,244.48	34,137.92	81,382.40
Sidewalk:			
Township of Shackleton and Machin.....	80.10	—	80.10
Connecting Links:			
Township of Kendrey.....	118,090.71	495.63	118,586.34
Town of Cochrane.....	—	6,018.68	6,018.68
Town of Hearst.....	—	5,225.03	5,225.03
Town of Iroquois Falls.....	—	4,691.22	4,691.22
Town of Kapuskasing.....	—	89.10	89.10
Town of Matheson.....	—	906.61	906.61
Town of Timmins.....	—	5,329.71	5,329.71
Unincorporated Township Roads:			
Statute Labour Board.....	61,071.26	53,085.48	114,156.74
Local Road Board.....	—	42,261.50	42,261.50
Special-Settlers.....	1,799.26	23,741.30	25,540.56
Development Roads.....	122,186.18	—	122,186.18
Ferries.....	—	32,821.37	32,821.37
Lands and Buildings.....	153,418.04	24,335.40	177,753.44
Weigh Scales.....	—	1,685.21	1,685.21
Miscellaneous Surveys.....	2,544.32	—	2,544.32
	<u>\$3,006,465.58</u>	<u>\$2,061,579.26</u>	<u>\$5,068,044.84</u>
<b>HALIBURTON:</b>			
Highway 28.....	\$ 6,503.83	\$ 29,492.53	\$ 35,996.36
" 35.....	553,231.59	136,167.45	689,399.04
" 60.....	818.77	15,753.08	16,571.85
" 121.....	140,138.72	148,815.49	288,954.21
Sec. Hwy. 503.....	3,032.79	96,701.61	99,734.40
" 507.....	6,225.03	11,624.82	17,849.85
" 519.....	176,086.97	95,642.24	271,729.21
" 530.....	51,326.46	32,135.69	83,462.15
" 648.....	4,512.72	43,739.92	48,252.64
Development Roads.....	7,422.55	—	7,422.55
Lands and Buildings.....	6.34	2,331.03	2,337.37
	<u>\$ 949,305.77</u>	<u>\$ 612,403.86</u>	<u>\$1,561,709.63</u>
<b>KENORA:</b>			
Highway 17.....	\$1,429,568.37	\$ 388,440.32	\$1,818,008.69
" 71.....	126,983.80	93,933.35	220,917.15
" 72.....	1,049,877.40	68,990.43	1,118,867.83
" 105.....	1,532,081.45	123,322.74	1,655,404.19
" 116.....	10,393.47	27,386.12	37,779.59
" 119.....	33,150.15	22,134.27	55,284.42
" 125.....	21,275.41	11,995.00	33,270.41
" 128.....	8,284.85	41,721.10	50,005.95
Sec. Hwy. 594.....	4,915.61	47,840.58	52,756.19
" 596.....	19,432.79	58,021.56	77,454.35
" 598.....	—	10,580.16	10,580.16
" 599.....	22,545.17	125,701.48	148,246.65
" 601.....	23,246.36	31,903.31	55,149.67
" 603.....	164.97	4,761.13	4,926.10
" 604.....	517.10	11,099.61	11,616.71
" 605.....	16,490.64	26,754.36	43,245.00
" 609.....	13,999.74	10,108.01	24,107.75
" 618.....	—	11,991.22	11,991.22
" 641.....	—	17,857.96	17,857.96
" 642.....	18,285.27	17,622.14	35,907.41
" 646.....	161.62	8,320.22	8,481.84
" 647.....	6,392.54	9,137.27	15,529.81
" 657.....	—	1,248.76	1,248.76
" 659.....	7,219.78	10,049.25	17,269.03
Tertiary Road 804.....	2,156.30	24,818.99	26,975.29
" 808.....	12.42	2,348.44	2,360.86

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>KENORA (Cont'd)</b>			
Sidewalk:			
Township of Red Lake .....	2,108.27	—	2,108.27
Connecting Links:			
Town of Dryden .....	—	1,372.40	1,372.40
Town of Keewatin .....	—	979.11	979.11
Town of Kenora .....	18,175.05	3,751.67	21,926.72
Unincorporated Township Roads:			
Statute Labour Board .....	1,348.24	48,585.48	49,933.72
Local Road Board .....	1,000.00	18,776.55	19,776.55
Special-Settlers .....	—	7,176.03	7,176.03
Special-Indian Reserves .....	—	6,255.51	6,255.51
Lands and Buildings .....	177,605.62	4,837.88	182,443.50
Weigh Scales .....	3,334.72	4,853.93	8,188.65
Miscellaneous Surveys .....	286.61	—	286.61
	<u>\$4,551,013.72</u>	<u>\$1,304,676.34</u>	<u>\$5,855,690.06</u>
<b>MANITOULIN:</b>			
Highway 68 .....	\$ 540,860.47	\$ 231,554.42	\$ 772,414.89
Sec. Hwy. 540 .....	124,916.09	330,548.04	455,464.13
“ “ 540A .....	365.65	7,700.52	8,066.17
“ “ 542 .....	344,292.97	135,101.45	479,394.42
“ “ 542A .....	—	3,719.12	3,719.12
“ “ 551 .....	8,519.19	43,207.13	51,726.32
“ “ 637 .....	56,405.01	70,124.77	126,529.78
Connecting Link:			
Town of Little Current .....	Cr. 5,274.44	640.48	Cr. 4,633.96
Unincorporated Township Roads:			
Statute Labour Board .....	34,195.26	24,160.69	58,355.95
Local Road Board .....	500.00	3,992.48	4,492.48
Development Roads .....	—	1,029.44	1,029.44
Lands and Buildings .....	29,843.27	8,966.69	38,809.96
	<u>\$1,134,623.47</u>	<u>\$ 860,745.23</u>	<u>\$1,995,368.70</u>
<b>MUSKOKA:</b>			
Highway 11 .....	\$2,001,329.35	\$ 170,774.77	\$2,172,104.12
“ “ 35 .....	338,679.05	33,700.44	372,379.49
“ “ 60 .....	24,336.85	38,905.59	63,242.44
“ “ 69 .....	282,429.19	76,624.68	359,053.87
“ “ 103 .....	1,531.88	540,823.28	542,355.16
“ “ 118 .....	809,198.27	105,567.87	914,766.14
“ “ 400 .....	28,766.30	—	28,766.30
Sec. Hwy. 501 .....	7,897.26	46,678.91	54,576.17
“ “ 514 .....	1,246.19	29,247.98	30,494.17
“ “ 516 .....	37,719.24	75,088.39	112,807.63
“ “ 525 .....	—	2,941.58	2,941.58
“ “ 527 .....	46.92	29,555.02	29,601.94
“ “ 532 .....	154,182.84	68,166.42	222,349.26
“ “ 592 .....	—	654.47	654.47
“ “ 612 .....	212.80	8,123.13	8,335.93
“ “ 632 .....	489,388.67	23,021.24	512,409.91
“ “ 660 .....	7,895.32	30,859.55	38,754.87
Connecting Links:			
Town of Bracebridge .....	—	2,218.79	2,218.79
Town of Gravenhurst .....	—	2,858.67	2,858.67
Town of Huntsville .....	9,740.01	3,629.54	13,369.55
Village of Port Carling .....	28,487.00	1,705.96	30,192.96
Unincorporated Township Roads:			
Statute Labour Board .....	—	24,255.29	24,255.29
Local Road Board .....	—	15,154.62	15,154.62
Development Roads .....	191,071.67	—	191,071.67
Lands and Buildings .....	8,452.82	15,122.18	23,575.00
Miscellaneous Surveys .....	14.67	—	14.67
	<u>\$4,422,626.30</u>	<u>\$1,345,678.37</u>	<u>\$5,768,304.67</u>



DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>NIPISSING:</b>			
Highway 11.....	\$ 233,641.11	\$ 583,034.24	\$ 816,675.35
"    17.....	1,549,122.04	251,574.92	1,800,696.96
"    60.....	955,731.63	147,218.81	1,102,950.44
"    63.....	785,338.37	120,529.61	905,867.98
"    64.....	332,173.76	153,081.44	485,255.20
"    94.....	14,237.81	18,578.49	32,816.30
"    123.....	45,246.38	16,580.04	61,826.42
"    127.....	1,295.35	54,105.33	55,400.68
Sec. Hwy. 514.....	30.27	2,196.10	2,226.37
"    523.....	2,458.71	28,088.68	30,547.39
"    528.....	422.65	3,687.15	4,109.80
"    531.....	25,245.80	6,319.31	31,565.11
"    533.....	172,734.77	72,287.30	245,022.07
"    539.....	27,532.81	57,692.05	85,224.86
"    539A.....	—	2,543.74	2,543.74
"    630.....	149,048.02	45,544.93	194,592.95
"    656.....	7,527.79	1,608.41	9,136.20
Tertiary Road 805.....	3,033.70	12,034.13	15,067.83
Sidewalk:			
City of North Bay.....	991.00	—	991.00
Connecting Links:			
Township of Ferris West.....	—	11,402.42	11,402.42
Town of Sturgeon Falls.....	35,604.05	8,232.46	43,836.51
Unincorporated Township Roads:			
Statute Labour Board.....	17,421.86	39,445.27	56,867.13
Local Road Board.....	44,601.81	46,456.52	91,058.33
Special-Settlers.....	1,000.00	1,774.34	2,774.34
Special-Indian Reserves.....	—	2,315.77	2,315.77
Development Roads.....	701,063.61	Cr. 739.73	700,323.88
Lands and Buildings.....	45,059.38	15,018.58	60,077.96
Miscellaneous Surveys.....	114.93	—	114.93
	<u>\$5,150,677.61</u>	<u>\$1,700,610.31</u>	<u>\$6,851,287.92</u>
<b>PARRY SOUND:</b>			
Highway 11.....	\$ 19,752.30	\$ 212,627.11	\$ 232,379.41
"    69.....	40,168.01	220,444.65	260,612.66
"    124.....	416,302.25	136,830.34	553,132.59
Sec. Hwy. 510.....	108.91	3,615.62	3,724.53
"    518.....	78,408.63	176,778.36	255,186.99
"    520.....	70,562.67	106,375.00	176,937.67
"    522.....	407,037.95	118,542.23	525,580.18
"    524.....	—	9,036.95	9,036.95
"    526.....	7.25	10,893.23	10,900.48
"    529.....	—	44,743.03	44,743.03
"    529A.....	2,662.84	8,132.80	10,795.64
"    532.....	22.81	26,680.14	26,702.95
"    534.....	6,171.91	69,658.45	75,830.36
"    559.....	73,837.23	31,974.93	105,812.16
"    592.....	1,354.27	34,838.16	36,192.43
"    612.....	—	7,135.54	7,135.54
"    632.....	928.77	31,439.85	32,368.62
"    644.....	—	1,932.73	1,932.73
"    645.....	—	8,353.64	8,353.64
"    654.....	12,969.94	43,988.88	56,958.82
Connecting Links:			
Town of Parry Sound.....	—	5,230.83	5,230.83
Village of Rosseau.....	—	514.69	514.69
Unincorporated Township Roads:			
Statute Labour Board.....	79,582.81	127,047.19	206,630.00
Local Road Board.....	1,347.43	31,001.66	32,349.09
Special-Settlers.....	—	723.31	723.31
Special-Indian Reserves.....	—	13,548.43	13,548.43
Development Roads.....	419,017.35	12,990.05	432,007.40
Lands and Buildings.....	115,065.37	4,518.13	119,583.50
Miscellaneous Surveys.....	2,021.54	—	2,021.54
	<u>\$1,747,330.24</u>	<u>\$1,499,595.93</u>	<u>\$3,246,926.17</u>

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>RAINY RIVER:</b>			
Highway 11.....	\$1,665,341.76	\$ 262,110.77	\$1,927,452.53
"    71.....	681,573.07	52,227.53	733,800.60
Sec. Hwy. 600.....	6,410.53	80,201.78	86,612.31
"    602.....	90,405.33	29,907.43	120,312.76
"    611.....	12,684.92	19,518.94	32,203.86
"    613.....	—	45,454.44	45,454.44
"    615.....	14,164.31	16,971.13	31,135.44
"    617.....	93.47	33,641.33	33,734.80
"    619.....	72,932.99	31,669.77	104,602.76
"    621.....	15,041.56	32,341.98	47,383.54
"    622.....	338.18	30,077.69	30,415.87
"    623.....	59,829.48	5,613.31	65,442.79
"    633.....	—	3,756.26	3,756.26
Connecting Links:			
Town of Fort Frances.....	94,361.32	9,058.23	103,419.55
Town of Rainy River.....	—	136.04	136.04
Unincorporated Township Roads:			
Statute Labour Board.....	—	14,906.94	14,906.94
Local Road Board.....	—	2,216.20	2,216.20
Special-Settlers.....	—	688.56	688.56
Special-Indian Reserves.....	—	6,516.38	6,516.38
Development Roads.....	28,065.70	—	28,065.70
Lands and Buildings.....	124,240.63	2,242.91	126,483.54
Weigh Scales.....	—	696.45	696.45
Miscellaneous Surveys.....	9.35	—	9.35
	<u>\$2,865,492.60</u>	<u>\$ 679,954.07</u>	<u>\$3,545,446.67</u>

<b>SUDBURY:</b>			
Highway 17.....	\$ 450,516.89	\$ 327,603.03	\$ 778,119.92
"    64.....	122,916.24	67,009.61	189,925.85
"    68.....	3,369.61	67,434.67	70,804.28
"    69.....	803,082.14	269,430.61	1,072,512.75
"    101.....	408,876.04	264,858.36	673,734.40
"    129.....	136,172.56	104,608.95	240,781.51
"    144.....	2,010,219.70	154,869.33	2,165,089.03
Sec. Hwy. 528.....	12,825.04	26,917.07	39,742.11
"    528A.....	—	8,815.22	8,815.22
"    535.....	70,426.29	80,585.24	151,011.53
"    536.....	71.21	11,211.74	11,282.95
"    537.....	83,816.59	45,790.51	129,607.10
"    539.....	39,261.48	31,683.70	70,945.18
"    541.....	98,386.07	72,669.11	171,055.18
"    541A.....	85.76	4,934.15	5,019.91
"    543.....	48,201.27	17,327.10	65,528.37
"    544.....	2,443.30	5,547.96	7,991.26
"    545.....	399.67	47,701.84	48,101.51
"    549.....	110,852.92	43,790.91	154,643.83
"    553.....	13,488.96	6,068.86	19,557.82
"    560.....	9,637.99	129,510.31	139,148.30
"    560A.....	—	8,205.96	8,205.96
"    606.....	11,672.54	2,330.80	14,003.34
"    607.....	18,090.13	21,000.26	39,090.39
"    607A.....	28.97	3,432.69	3,461.66
"    616.....	7,116.60	2,385.40	9,502.00
"    634.....	506,897.11	31,450.57	538,347.68
"    637.....	4,243.76	65,871.37	70,115.13
"    651.....	10,941.79	—	10,941.79
"    658.....	7,122.75	32,539.77	39,662.52
Tertiary Road 805.....	1,120.32	3,751.05	4,871.37
"    806.....	—	1,571.26	1,571.26
Industrial Road:			
E. A. Wicks.....	—	2,358.41	2,358.41
Connecting Links:			
City of Sudbury.....	410,524.70	—	410,524.70
Town of Capreol.....	—	884.83	884.83
Town of Espanola.....	—	1,562.19	1,562.19

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>SUDBURY (Cont'd)</b>			
Unincorporated Township Roads:			
Statute Labour Board.....	27,126.68	63,905.80	91,032.48
Local Road Board.....	77,153.70	67,121.35	144,275.05
Special-Settlers.....	500.00	7,050.73	7,550.73
Special-Indian Reserves.....	—	582.21	582.21
Development Roads.....	36,909.76	639.17	37,548.93
Lands and Buildings.....	82,475.04	28,097.39	110,572.43
Miscellaneous Surveys.....	12,718.48	—	12,718.48
	<u>\$5,639,692.06</u>	<u>\$2,133,109.49</u>	<u>\$7,772,801.55</u>
<b>THUNDER BAY:</b>			
Highway 11.....	\$2,167,340.37	\$ 725,576.90	\$2,892,917.27
“ 11A.....	51,011.51	66,574.79	117,586.30
“ 17.....	1,186,171.07	546,540.74	1,732,711.81
“ 61.....	20,572.52	57,976.75	78,549.27
“ 130.....	15,130.71	43,912.16	59,042.87
Sec. Hwy. 580.....	239.46	7,684.31	7,923.77
“ 582.....	392.72	6,024.32	6,417.04
“ 584.....	11,239.49	66,071.23	77,310.72
“ 584A.....	—	2,811.64	2,811.64
“ 585.....	335.79	54,490.70	54,826.49
“ 586.....	748.26	3,944.37	4,692.63
“ 587.....	26,154.83	66,170.95	92,325.78
“ 588.....	111,684.89	95,668.02	207,352.91
“ 589.....	18,589.05	46,803.95	65,393.00
“ 590.....	49,392.40	81,146.21	130,538.61
“ 591.....	18,945.89	17,392.10	36,337.99
“ 593.....	8,424.10	39,424.09	47,848.19
“ 595.....	25,176.64	52,386.68	77,563.32
“ 597.....	3,943.28	17,045.67	20,988.95
“ 599.....	10,982.66	90,286.35	101,269.01
“ 608.....	49,786.30	25,723.61	75,509.91
“ 614.....	996,762.85	109,167.50	1,105,930.35
“ 625.....	7,641.13	40,556.52	48,197.65
“ 627.....	—	8,693.60	8,693.60
“ 628.....	343,204.29	7,580.69	350,784.98
“ 643.....	—	10,678.23	10,678.23
Tertiary Road 800.....	1,248.00	26,923.41	28,171.41
“ 801.....	261.35	2,640.45	2,901.80
“ 802.....	—	16,291.42	16,291.42
Access Road:			
Armstrong Road.....	Cr. 2,407.20	—	Cr. 2,407.20
Industrial Road:			
Caramat to Manitouwadge.....	—	37,247.48	37,247.48
Connecting Links:			
City of Fort William.....	41,888.67	—	41,888.67
Town of Geraldton.....	—	8,429.84	8,429.84
Unincorporated Township Roads:			
Statute Labour Board.....	14,862.77	22,708.44	37,571.21
Local Road Board.....	14,503.80	117,586.70	132,090.50
Special-Settlers.....	92,929.03	9,764.88	102,693.91
Special-Indian Reserve.....	—	33.23	33.23
Development Roads.....	40,517.00	—	40,517.00
Lands and Buildings.....	78,036.22	15,835.66	93,871.88
Weigh Scales.....	119,598.62	456.05	120,054.67
Miscellaneous Surveys.....	2,129.77	—	2,129.77
	<u>\$5,527,438.24</u>	<u>\$2,548,249.64</u>	<u>\$8,075,687.88</u>

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>MISKAMING:</b>			
Highway 11:	\$ 100,673.88	\$ 343,728.80	\$ 444,402.68
" 65	153,684.83	207,273.17	360,958.00
" 66	17,872.43	132,364.66	150,237.09
" 101	118,270.87	44,366.95	162,637.82
" 112	1,095.55	28,464.33	29,559.88
" 144	807,441.96	—	807,441.96
Sec. Hwy. 558	13,037.75	35,931.08	48,968.83
" 560	193,628.55	214,884.29	408,512.84
" 562	4,304.32	22,359.02	26,663.34
" 564	—	15,118.35	15,118.35
" 566	13,611.94	31,086.99	44,698.93
" 567	23,075.76	45,552.44	68,628.20
" 568	—	2,645.95	2,645.95
" 569	7,231.63	39,426.94	46,658.57
" 570	—	3,800.62	3,800.62
" 571	—	7,917.57	7,917.57
" 573	—	27,669.44	27,669.44
" 624	270,851.14	55,276.74	326,127.88
" 640	—	4,384.90	4,384.90
" 650	204,367.23	12,958.50	217,325.73
Industrial Road:			
E. A. Wicks	2,435.44	2,706.93	5,142.37
Special Agreement:			
Moose Creek Bridge (Township of Casey)	1,968.92	—	1,968.92
Connecting Links:			
Township of Teck	—	133.65	133.65
Town of Cobalt	18,459.80	3,781.53	22,241.33
Town of Haileybury	940.95	2,570.27	3,511.22
Town of New Liskeard	3,414.68	7,998.89	11,413.57
Unincorporated Township Roads:			
Statute Labour Board	—	41,224.18	41,224.18
Local Road Board	—	16,526.80	16,526.80
Special-Settlers	36,290.71	2,338.53	38,629.24
Development Roads	8,912.01	—	8,912.01
Lands and Buildings	54,540.90	14,362.29	68,903.19
Weigh Scales	21,076.50	—	21,076.50
Miscellaneous Surveys	4,374.95	—	4,374.95
	<u>\$ 2,081,562.70</u>	<u>\$ 1,366,853.81</u>	<u>\$ 3,448,416.51</u>
County and District Totals	\$185,115,551.22	\$47,740,333.23	\$232,855,884.45
Sundry Unallocated, District Office Administrative Engineering, Building, Inventory Charges, etc.	3,814,250.85	10,648,759.47	14,463,010.32
Total Expenditures	<u>\$188,929,802.07</u>	<u>\$58,389,092.70</u>	<u>\$247,318,894.77</u>



## APPENDIX No. 2a

**Development Road Expenditure in Municipalities by County and Territorial Districts**  
**(Authorized by Part XI of The Highway Improvement Act)**

**April 1, 1966 to March 31, 1967**

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>BRANT</b>					
647	Cockshutt Road.....	5.6	County	\$ 28,769.82	
853	County Road 13 (Part).....	2.8	County	3,506.11	
909	County Road.....	—	County	11,190.65	
					\$ 43,466.58
<b>BRUCE</b>					
758	County Road 3 (Part).....	12.5	County	\$562,442.76	
A 799	Ashfield-Huron Townline.....	1.29	Ashfield and Huron	2,110.03	
819	County Road 3A (Part).....	0.9	County	3,263.72	
892	County Road 2 (Part).....	—	County	889.20	
					\$ 568,705.71
<b>CARLETON</b>					
754	Dwyer Hill Road.....	10.4	Goulbourn	\$ 81,280.91	
780	March/Torbolton Townline (Part).....	1.2	Torbolton and March	10,577.32	
822	County Road 26 to Marlborough/ Goulbourn Boundary.....	4.5	Marlborough	198,234.91	
823	Concession X/XI Road.....	5.8	Huntley	156,292.46	
827	Concession VII/VIII Road.....	10.1	Osgoode	3,806.84	
889	County Road 21 and 31.....	—	County	6,724.95	
					\$ 456,917.39
<b>DUFFERIN</b>					
609	Hornings Mills to Terra Nova (Part).....	7.1	Mulmer	\$ 20,460.03	
610	Hornings Mills Bridge.....	0.9	Melancthon	2,364.59	
777	County Road 10 (Part).....	6.9	County	251,852.84	
841	Proposed County Road 10 (Part).....	4.2	County	20,629.14	
881	County Roads 2 and 23 (Part).....	—	County	1,772.50	
					\$ 297,079.10
<b>ELGIN</b>					
785	Griffin's Corners Easterly.....	3.5	Bayham	\$ 59,377.33	
840	County Road 52 (Part).....	11.8	County	76,401.31	
879	County Roads 5, 18 and 52 (Part).....	—	County	18,118.45	
					\$ 153,897.09
<b>ESSEX</b>					
911	County Roads 2, 28 and 27.....	—	County	\$ 12,457.75	
					\$ 12,457.75
<b>FRONTENAC</b>					
415	Snow Road—Ompah.....	10.0	Palmerston, North and South Canonto	\$ 604.01	
655	Crow Lake Easterly.....	4.0	Oso	10,495.47	
765	County Road 16A (Part).....	3.5	County	10,230.50	
771	Kennebec Township Road (Part).....	2.7	Kennebec	226,256.44	
774	County Road 9 (Part).....	6.8	County	200,348.29	
806	Hwy. 7 to Olden/Hinchinbrooke Boundary.....	7.7	Olden	16,485.48	
826	County Road 12 (Part).....	6.5	County	581,081.02	
861	County Road 3 (Part).....	8.1	County	14,067.16	
862	County Road 10 (Part).....	5.3	County	10,708.84	
863	County Road 11A (Part).....	2.6	County	463.20	
925	County Roads 6 and 15 (Part).....	—	County	15,589.60	
					\$ 1,086,330.01

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>GREY</b>					
715	Road to Ontario Hospital.....	2.0	Sydenham	\$ 59,269.89	
721	County Roads 18 and 5 (Part).....	4.0	County	15,254.33	
783	County Road 13.....	25.0	County	416,718.47	
886	County Road 10 (Part).....	17.5	County	16,061.16	
891	County Road 11C (Part).....	—	County	1,839.83	
					\$ 509,143.68
<b>HALDIMAND</b>					
752	County Roads 12M and 12N.....	5.2	County	\$ 4,520.77	
791	County Road 12.....	6.4	County	201,141.64	
					\$ 205,662.41
<b>HASTINGS</b>					
591R	Deltor Road (Part).....	2.1	Dungannon	\$ 5,618.85	
711	County Road 4.....	4.5	County	211,810.75	
740	Balsam Lake-Jones Boundary.....	4.0	Bangor, Wicklow and McClure	1,621.52	
801	Weslemkoon Road.....	11.0	Tudor and Cashel	231,280.73	
802	County Road 12 to Hwy. 62.....	2.4	Madoc	11,537.50	
804	Road in Lots 23, 24 and Con. X.....	0.9	Wollaston	124,180.33	
805	Road along C.N.R. Right-of way (Baptiste Station).....	3.1	Herschel	57,329.60	
824	County Road 12.....	7.2	County	148,094.93	
836	Road between Lots 20/21 (Part).....	0.4	Carlow	17,504.83	
854	County Road 5 (Part).....	4.9	County	4,932.40	
855	County Road 9 (Part).....	6.6	County	8,509.54	
856	County Road 3.....	8.4	County	12,650.49	
882	Madawaska Road.....	9.0	Bangor, Wicklow and McClure	12,351.04	
914	County Roads 7A and 13 (Part).....	2.0	County	4,799.60	
917	County Roads 6A, 13A, 19, 2A, 12A, 11, 4 and 9.....	—	County	23,195.95	
					\$ 875,418.06
<b>HURON</b>					
B 734	Stephen/McGillivray Townline.....	3.0	McGillivray and Stephen	\$ 24,192.54	
759	County Road 4 (Part).....	10.1	County	560,302.10	
A 799	Ashfield-Huron Townline.....	—	Ashfield and Huron	2,110.03	
870	County Roads 1, 9, 10, 2, 15, 24, 31 and 26.....	—	County	42,663.50	
898	County Road 12 (Part).....	1.3	County	2,558.02	
899	County Road 3 (Part).....	4.3	County	8,077.71	
904	County Road 8 (Part).....	6.5	County	470.93	
					\$ 640,374.83
<b>KENT</b>					
697	County Road 1 (Part).....	6.1	County	\$ 14,387.75	
756	Proposed Kent County Road.....	4.4	County	318,040.82	
					\$ 332,428.57
<b>LAMBTON</b>					
C 724	County Road 12 and 6A.....	7.0	County	\$ 1,764.39	
733	Tri County Bridge to Hwy. 21.....	2.7	County	123,206.91	
837	County Road 5.....	8.2	County	26,464.23	
857	County Road 4.....	5.4	County	42,584.21	
858	County Road 2 (Part).....	4.4	County	18,270.05	
928	County Road 10.....	—	County	1,147.00	
936	County Road 3 (Part).....	—	County	5,673.15	
					\$ 219,109.94

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>LANARK</b>					
613	Fallbrooke Westerly.....	8.0	Bathurst	\$ 28,369.28	
654	Second Line Road.....	6.65	Sherbrooke South	174,713.54	
741	County Road 15.....	9.1	County	35,829.06	
779	Black Creek Road.....	6.4	Lavant	37,808.80	
820	County Road 20 (Part).....	4.33	County	496,181.78	
821	County Road 20 (Part).....	2.0	County	169,038.27	
844	County Road 1A.....	6.8	County	32,862.01	
845	County Road 5A (Part).....	3.7	County	28,293.39	
846	County Road 3C (Part).....	6.4	County	19,767.77	
880	Joe Lake Road.....	0.6	Dalhousie and N. Sherbrooke	14,625.47	
894	County Road 16 and 1E.....	—	County	5,877.05	
932	County Road 6B.....	12.1	County	17,236.28	
					\$ 1,060,602.70
<b>LEEDS AND GRENVILLE</b>					
285R	Escott-Rockport Road.....	5.7	Escott Front	\$ 16,701.69	
572	Warburton-Long Point.....	6.0	County	143,300.09	
642	County Road 10 (Part).....	8.5	County	180,535.08	
689	Yonge Boundary to Hwy. 29.....	7.0	Elizabethtown	132,560.40	
705	Concession V/VI Road.....	3.1	Kitley	8,061.88	
739	Sideroad 6/7.....	4.25	South Gower	4,032.15	
792	County Road 5A.....	2.1	County	45,899.91	
859	County Road 3 (Part).....	3.5	County	19,448.88	
860	County Road 22 (Part).....	5.3	County	36,220.60	
884	Kyes Road.....	3.0	Front of Leeds and Lansdowne	6,069.33	
903	County Road 4, 5C, 16C, 22A and 24	—	County	11,969.20	
915	County Road 21 (Part).....	3.2	County	1,680.00	
					\$ 606,479.21
<b>LENNOX AND ADDINGTON</b>					
626	Tamworth Easterly Road.....	4.0	Sheffield	\$ 53,612.47	
731	County Road 5 (Part).....	2.9	County	54,061.07	
732	Centreville—Hwy. 401.....	10.8	County	547,161.95	
761	Dorland—Sir J. A. Macdonald Monument.....	3.76	Adolphustown	228,158.28	
868	County Road 9 (Part).....	5.1	County	11,400.98	
876	County Road 2 and 9 (Part).....	—	County	3,418.20	
902	Vennachar Road.....	2.7	Denbigh, Abinger and Ashby	4,190.17	
907	County Road 14 (Part).....	4.4	County	4,732.15	
					\$ 906,735.27
<b>LINCOLN</b>					
D 683	Lincoln/Welland.....	11.0	County	\$ 33,640.42	
787	South Chippawa Road.....	10.1	Caistor	22,759.60	
					\$ 56,400.02
<b>MIDDLESEX</b>					
C 724	County Road 12 and 6A.....	—	County	\$ 6,772.39	
B 734	Stephen/McGillivray Townline.....	—	McGillivray and Stephen	24,192.55	
878	Mill St., Town of Parkhill.....	—	County	1,928.00	
					\$ 32,892.94
<b>NORFOLK</b>					
684	County Road 9.....	8.4	County	\$387,647.19	
847	County Road 20 (Part).....	3.4	County	2,347.55	
875	County Road 8A and 9 (Part).....	—	County	2,700.00	
895	County Road 30 (Part).....	4.6	County	578.60	
					\$ 393,273.34

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>NORTHUMBERLAND AND DURHAM</b>					
704	Roseneath Easterly..	2.9	Alnwick	\$ 62,299.64	
706	Base Line Road	4.8	Darlington	212,847.73	
725	Lot 6/7, Con. B, A and I .....	3.0	Murray	248,281.18	
800	County Road 38 (Part).....	0.4	County	87,309.54	
818	County Road 70 (Part).....	1.72	County	152,999.89	
				<hr/>	\$ 763,737.98
<b>ONTARIO</b>					
681	Thickson Road (Part).....	8.7	County	\$ 10,695.09	
769	County Road 21 (Part).....	5.3	County	528,886.47	
848	County Road 12 (Part).....	4.6	County	17,266.30	
849	Proposed County Road 1A.....	2.4	County	5,711.89	
850	County Road 11A (Part).....	2.9	County	5,441.46	
893	County Road 7A (Part).....	—	County	3,342.25	
				<hr/>	\$ 571,343.46
<b>OXFORD</b>					
793	Lass Bridge .....	—	Blenheim	\$ 6,438.22	
794	Wolverton Bridge .....	—	Blenheim	117,836.42	
885	County Road 31 (Part).....	—	County	626.50	
				<hr/>	\$ 124,901.14
<b>PEEL</b>					
744	Twentieth Sideroad .....	4.7	Albion	\$441,975.88	
				<hr/>	\$ 441,975.88
<b>PERTH</b>					
716	County Road 6.. ..	8.0	County	\$ 3,256.80	
				<hr/>	\$ 3,256.80
<b>PETERBOROUGH</b>					
587R	Havelock-Rush Point.....	17.7	Belmont and Methuen	\$643,326.86	
659	Ninth Line Road .....	12.0	Dummer	291,891.90	
700	Stoney Lake North Shore Road	5.5	Burleigh	2,853.53	
832	County Road 2 (Part).....	4.7	County	10,586.85	
833	County Road 6 (Part).....	5.1	County	16,640.20	
838	County Road 4 (Part).....	9.4	County	71,322.13	
				<hr/>	\$ 1,036,621.47
<b>PRESCOTT AND RUSSELL</b>					
621	Vars to Osgoode Twp. Boundary	4.5	Cumberland	\$ 18,908.88	
650	County Road 13 (Part) ..	4.05	County	1,138.03	
773	County Road 2 (Part).....	15.6	County	474,776.77	
789	County Road 18 .....	6.3	County	455,826.17	
864	County Road 9 (Part).....	8.1	County	18,682.40	
865	County Road 15 (Part).....	8.7	County	18,320.00	
896	County Road 6, 15A and 14...	—	County	14,795.00	
				<hr/>	\$ 1,002,447.25
<b>PRINCE EDWARD</b>					
746	County Road 15 .....	12.0	County	\$200,764.69	
817	County Roads 7 and 8 (Part)	8.3	County	91,984.06	
866	County Road 12 (Part).....	6.2	County	26,378.38	
867	County Road 13 (Part).....	3.9	County	20,775.21	
890	County Roads 6, 9, 21 and 27.	—	County	22,775.35	
				<hr/>	\$ 362,677.69



ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>RENFREW</b>					
117R	Combermere-Rockingham.....	6.75	Radcliffe	296,693.11	
541	Admaston-Bagot Townline.....	10.4	Admaston and Bagot	24,767.83	
676	River Road.....	13.8	County	90,136.58	
738	Hardwood Lake-Palmer Rapids.....	7.0	Raglan	323,992.27	
747	Alice-Petawawa Townline.....	5.0	Alice, Fraser and Petawawa	4,436.62	
795	Barry's Bay Road.....	9.1	Sherwood, Jones and Burns	226,982.34	
796	Opeongo Road.....	10.2	Sebastopol	18,161.73	
797	Opeongo Road (Part).....	6.6	Brudenell and Lyndoch	37,334.45	
798	Ruby Road.....	7.9	South Algoma	62,681.12	
869	Madawaska River Bridge.....	—	Griffith and Matawachan	194,881.00	
872	Deux Rivières Bridge.....	0.03	Head, Clara and Maria	539.29	
897	Opeongo Road.....	6.0	Gratton	19,853.67	
					\$ 1,300,460.01
<b>SIMCOE</b>					
581	Essa-Innisfil Townline.....	4.2	Essa and Innisfil	\$ 47,899.33	
695	County Road 17 (Part).....	9.2	County	130,340.11	
760	Tenth Sideroad.....	11.6	Tecumseth	7,525.51	
810	County Road 22 (Part).....	6.4	County	545,130.40	
877	County Road 8 (Part).....	—	County	3,860.65	
					\$ 734,756.00
<b>STORMONT, DUNDAS AND GLENGARRY</b>					
559	Concession IV/V (Part).....	4.5	Lochiel	\$ 19,983.13	
719	Lots 12/13, Concession II-VIII.....	6.8	Mountain	22,508.88	
722	County Road 7.....	7.0	County	1,877.18	
768	Brinston Easterly Road.....	3.8	Matilda	4,368.72	
788	County Road 24 (Part).....	9.4	County	459,707.85	
839	County Road 12 (Part).....	6.5	County	26,117.14	
910	County Roads 9, 11, 28, 13A, 3, 18, 21 and 12.....	—	County	43,564.25	
923	County Road 12 (Part).....	8.35	County	4,203.16	
924	County Road 1 (Part).....	6.45	County	5,476.93	
					\$ 587,807.24
<b>VICTORIA</b>					
718	Bobcaygeon to Fenelon Falls.....	9.5	County	\$451,351.87	
775	County Road 28 (Part).....	5.6	County	143,267.61	
842	County Road 5 (Part).....	6.8	County	9,918.53	
843	County Road 4 (Part).....	4.8	County	10,545.46	
851	County Road 8.....	14.6	County	8,286.40	
852	Road Westerly from Hwy. 121.....	2.5	Somerville	3,000.00	
935	County Road 18 and 32 (Part).....	—	County	18,108.90	
					\$ 644,478.77
<b>WELLAND</b>					
D 683	Lincoln/Welland.....	—	County	\$ 8,394.94	
					\$ 8,394.94
<b>WELLINGTON</b>					
712	County Road 65.....	5.5	County	\$ 72,153.38	
726	County Road 58 (Part).....	4.82	County	347,138.08	
727	County Road 69 (Part).....	2.9	County	72,834.43	
736	Hwy. 6 to Victoria Bridge.....	1.1	Guelph	10,112.01	
825	County Road 58 (Part).....	10.4	County	16,362.67	
834	County Road 60.....	7.3	County	34,348.88	
835	Proposed County Road.....	9.5	County	39,618.10	
871	County Roads 69, 92, 62, 52, 76, 59 and 75.....	—	County	30,271.50	
					\$ 622,839.05

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>WENTWORTH</b>					
950	County Road 43, 15A, 14 and 23.....	—	County	\$ 25,538.35	\$ 25,538.35
<b>YORK</b>					
735	County Road 31 (Part).....	6.05	County	cr.\$ 18,982.32	cr.\$ 18,982.32
<b>ALGOMA</b>					
713	Dean Lake Bridge.....	—	Thompson	\$ 3,385.67	
808	Road between Lots 10/11 Southerly...	1.48	Jocelyn	92,072.31	\$ 95,457.98
<b>COCHRANE</b>					
772	Oil Tank Road.....	5.0	Calvert	\$ 28,875.95	
901	Brunelle Road.....	1.0	Kapuskasing, Town	93,310.23	\$ 122,186.18
<b>HALIBURTON</b>					
912	Proposed County Road.....	20.5	County	\$ 7,422.55	\$ 7,422.55
<b>MANITOULIN</b>					
948	Bidwell Road (Part).....	12.1	Assignack	\$ 349.53	
949	Bidwell Road (Part).....	8.0	Havland	679.91	\$ 1,029.44
<b>MUSKOKA</b>					
594	Huntsville-Rousseau (Part).....	9.0	Stisted and Stephenson	\$ 10,861.69	
667	Seeley-Brunel Road.....	3.7	Brunel	34,872.45	
671	Black Creek Bridge-Mathiasville.....	3.25	Draper	137,247.78	
762	Rotary Beach Road.....	1.2	Chaffey	7,493.70	
912	Proposed County Road.....	—	County	596.05	\$ 191,071.67
<b>NIPISSING</b>					
656	Caderette Corners—Hwy. 64.....	4.15	Caldwell	\$207,352.74	
737	Concession XII/XIII Road.....	1.25	Chisholm	100,393.42	
743	Trout Lake Road.....	4.5	East Ferris	391,468.41	
778	Calvin/Papineau Townline (Part).....	1.2	Calvin and Papineau	cr. 739.73	
782	Powassan-Rutherglen Road (Part).....	3.8	Bonfield	1,849.04	\$ 700,323.88
<b>PARRY SOUND</b>					
34R	Dillon Cove Road.....	10.0	Carling	\$269,001.53	
136R	South Himsworth Township Road.....	3.75	South Himsworth	12,990.05	
614R	Humphrey Boundary Northerly.....	2.0	Christie	70,600.90	
680	Killbear Park Road.....	5.6	Carling	16 964.86	
790	Concession X/XI (Part).....	0.7	Joly	666.46	
814	Road between Concession VIII/IX.....	0.7	Ryerson	43,003.23	
828	Mill Street East.....	0.25	Powassan, Town	5,606.68	
829	Great North Road.....	1.2	Parry Sound, Town	13,173.69	\$ 432,007.40
<b>RAINY RIVER</b>					
757	Dilke/Nelles Boundary Road.....	7.0	Dilke	\$ 25,277.36	
874	Township Road.....	6.0	Worthington	2,788.34	\$ 28,065.70

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
SUDBURY					
530	River Road.....	6.0	Salter, May and Harrow	\$ 25,845.88	
707	Concession IV/V Road.....	5.4	Hagar	3,509.50	
811	Bridge 15.....	0.1	Hallam	639.17	
830	Whitson Creek Bridge.....	0.1	Chelmsford, Town	7,554.38	
				<u>          </u>	\$ 37,548.93
TIMISKAMING					
767	Shannon's Bridge and approaches.....	—	Casey and Brethour	\$ 975.83	
809	Blanche River Bridge.....	0.1	Eventurel	4,059.93	
831	Little Otter Creek Bridge.....	0.1	Hilliard	1,713.52	
926	Bear Creek Bridge.....	—	Dymond and Harley	2,162.73	
				<u>          </u>	\$ 8,912.01
THUNDER BAY					
807	Sideroad 2/3.....	3.2	Conmee	\$ 40,517.00	
		<u>1,097.73</u>			\$ 40,517.00
					\$18,334,171.05
8003	Stockpile material.....			cr.	66.24
	TOTAL EXPENDITURES.....				<u>\$18,334,104.81</u>

Development roads split into two counties:

- A Huron and Bruce
- B Middlesex and Huron
- C Middlesex and Lambton
- D Lincoln and Welland
- E Haliburton and Muskoka

## APPENDIX No. 2b

**Unincorporated Townships Statute Labour Board Road Expenditures  
by Territorial Districts**

**(Part XII, The Highway Improvement Act)**

**For the Year Ending March 31, 1967**

LOCATION AND NAME	STATUTE LABOUR BOARD EXPENDITURE	DEPARTMENT EXPENDITURE	DEPARTMENT EXPENDITURE	TOTAL EXPENDITURE
	ORDINARY	ORDINARY	CAPITAL	
LGOMA				
Aweres No. 1.....	\$ 1,723.99	\$ 3,081.34	\$ —	\$ 4,805.33
Aweres No. 2.....	379.39	50.00	—	429.39
Cobden.....	548.12	715.39	—	1,263.51
Dennis.....	220.96	1,005.44	—	1,226.40
Deroche.....	1,041.56	414.62	—	1,456.18
Fenwick and Kars..	4,016.89	4,182.84	—	8,199.73
Galbraith.....	640.00	1,919.53	—	2,559.53
Havilland ..	1,972.78	4,386.80	—	6,359.58
Hawk Jct.....	—	561.79	—	561.79
Patton and Montgomery.....	—	1,297.15	—	1,297.15
Ranger Lake Road...	902.44	16,473.46	—	17,375.90
Shedden.....	4,525.93	3,768.66	—	8,294.59
Shields and Gaudette ..	524.68	3,841.67	—	4,366.35
Striker and Cobden .....	1,069.95	1,655.96	—	2,725.91
Tilley .....	—	4.46	—	4.46
Vankoughnet and Aweres.....	—	582.93	—	582.93
Victoria.....	6,552.55	8,875.06	—	15,427.61
	<u>\$ 24,119.24</u>	<u>\$ 52,817.10</u>	<u>\$ —</u>	<u>\$ 76,936.34</u>
OCHRAHE				
Brower West ..	\$ 1,577.05	\$ 1,225.36	\$ —	\$ 2,802.41
Calder.....	2,414.92	1,417.00	—	3,831.92
Casgrain.....	3,699.17	1,786.58	—	5,485.75
Clute Calder.....	—	—	24,182.53	24,182.53
Clute West.....	—	—	3,931.62	3,931.62
Devitt .....	1,176.65	1,511.51	—	2,688.16
Eilber and Barker.....	637.16	701.11	—	1,338.27
Eilber and Devitt.....	5,183.35	5,041.76	—	10,225.11
Evelyn .....	1,010.27	660.86	—	1,671.13
Fournier.....	—	—	4,027.30	4,027.30
Fox, Brower and Pyne.....	2,302.12	3,340.83	3,783.55	9,426.50
German and Matheson.....	3,699.77	4,787.61	—	8,487.38
Hanlan and Way.....	4,752.82	6,437.23	—	11,190.05
Idington, Williamson and Owen.....	—	24.59	—	24.59
Kendall No. 1 .....	4,245.06	3,841.02	58.65	8,144.73
Kendall No. 2 .....	4,153.28	4,010.99	1,649.36	9,813.63
Kendall and Devitt.....	—	—	6,013.31	6,013.31
Kennedy.....	1,583.97	2,432.80	1,829.97	5,846.74
Lamarche.....	6,015.43	5,353.34	—	11,368.77
Leclair Avenue.....	683.47	468.27	—	1,151.74
Lowther.....	2,407.45	1,473.47	—	3,880.92
Lowther and Way.....	3,752.45	548.08	—	4,300.53
Newmarket.....	1,909.59	2,549.69	513.53	4,972.81
Nordica, McEvay and McCann.....	1,062.70	1,145.19	—	2,207.89
Ogden.....	1,598.93	2,229.78	—	3,828.71
Owens N.E. and Williamson S.E.....	—	529.72	7,697.78	8,227.50
Shaw.....	594.93	138.50	—	733.43
Sheraton and Macklem .....	1,537.77	593.69	—	2,131.46
Way Centre .....	3,476.53	836.50	7,383.66	11,696.69
	<u>\$ 59,474.84</u>	<u>\$ 53,085.48</u>	<u>\$ 61,071.26</u>	<u>\$173,631.58</u>



LOCATION AND NAME	STATUTE LABOUR BOARD EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>KENORA</b>				
Aubrey East.....	\$ 575.05	\$ 3,988.18	\$ —	\$ 4,563.23
Britton.....	1,466.60	1,449.46	—	2,916.06
Colenso, Redvers and Wabigoon.....	1,027.45	1,995.63	—	3,023.08
Drayton Reserve.....	1,496.11	2,352.87	—	3,848.98
Eton.....	2,110.33	3,357.76	—	5,468.09
Meglund.....	761.79	1,330.54	—	2,092.33
Mutrie.....	2,390.52	2,840.20	—	5,230.72
Pellatt No. 1.....	1,038.58	2,155.24	—	3,193.82
Pellatt No. 2.....	1,780.19	2,760.33	—	4,540.52
Redditt.....	868.79	606.38	1,348.24	2,823.41
Rowell.....	582.16	566.76	—	1,148.92
Rugby.....	1,476.15	1,987.52	—	3,463.67
Southworth.....	1,377.21	1,726.93	—	3,104.14
Umbach UT. N. of.....	3,954.17	3,361.83	—	7,316.00
Van Horne.....	1,953.52	2,959.96	—	4,913.48
Vermilion Additional.....	710.08	992.22	—	1,702.30
Wabigoon West and Redvers West.....	2,036.18	2,793.91	—	4,830.09
Wainwright and Eton Lot 1.....	3,009.00	5,470.22	—	8,479.22
Zealand No. 1.....	4,394.93	3,873.27	—	8,268.20
Zealand No. 3.....	452.78	2,016.27	—	2,469.05
	<u>\$ 33,461.59</u>	<u>\$ 48,585.48</u>	<u>\$ 1,348.24</u>	<u>\$ 83,395.31</u>
<b>MANITOULIN</b>				
Campbell.....	\$ 5,925.61	\$ 8,637.12	\$ 34,195.26	\$ 48,757.99
Dawson.....	1,969.97	1,983.37	—	3,953.34
Mills.....	5,215.50	4,879.84	—	10,095.34
Robinson.....	9,617.05	8,660.36	—	18,277.41
	<u>\$ 22,728.13</u>	<u>\$ 24,160.69</u>	<u>\$ 34,195.26</u>	<u>\$ 81,084.08</u>
<b>MUSKOKA</b>				
Baxter.....	\$ 16,000.00	\$ 17,856.46	\$ —	\$ 33,856.46
Go Home Lake.....	4,439.06	5,227.38	—	9,666.44
N. Gibson Lake.....	782.11	191.04	—	973.15
Sinclair.....	980.41	980.41	—	1,960.82
	<u>\$ 22,201.58</u>	<u>\$ 24,255.29</u>	<u>\$ —</u>	<u>\$ 46,456.87</u>
<b>NIPISSING</b>				
Badgerow No. 1.....	\$ 1,091.50	\$ 2,073.38	\$ 5,425.66	\$ 8,590.54
Bastedo.....	—	1,390.62	3,403.87	4,794.49
Crerar.....	—	742.74	—	742.74
Dickens.....	1,118.57	2,179.32	—	3,297.89
Falconer, S. Loudon and S.E. Haddo.....	—	1,500.91	—	1,500.91
Gibbons South.....	2,597.36	2,115.09	—	4,712.45
Grant.....	—	817.11	—	817.11
Hugel.....	—	791.25	—	791.25
Kirkpatrick.....	6,495.77	9,128.13	4,706.92	20,330.82
MacPherson, N. Loudon and N.E. Haddo.....	11,623.44	10,821.28	3,885.41	26,330.13
Murchison.....	1,201.00	2,549.16	—	3,750.16
Phelps.....	—	2,386.62	—	2,386.62
Sabine.....	180.85	1,265.35	—	1,446.20
Tasso Lake.....	468.38	1,421.90	—	1,890.28
West Oxbow Lake.....	54.33	Cr. 58.02	—	Cr. 3.69
Wyse and Poitras.....	—	320.43	—	320.43
	<u>\$ 24,831.20</u>	<u>\$ 39,445.27</u>	<u>\$ 17,421.86</u>	<u>\$ 81,698.33</u>

LOCATION AND NAME	STATUTE LABOUR BOARD EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>ARRY SOUND</b>				
Bethune .....	\$ 4,805.57	\$ 4,899.90	\$ 2,674.31	\$ 12,379.78
Blair and Mowat .....	3,679.43	4,212.53	—	7,891.96
Conger North .....	8,876.51	6,874.53	—	15,751.04
Croft .....	6,762.39	6,226.62	14,692.97	27,681.98
Ferguson .....	3,618.78	3,330.83	—	6,949.61
Ferrie .....	1,810.29	929.78	—	2,740.07
Gurd .....	10,022.88	12,602.03	22,171.34	44,796.25
Harrison .....	1,647.84	1,647.84	—	3,295.68
Laurier .....	2,389.54	2,086.69	3,000.00	7,476.23
Lount .....	4,654.82	12,301.98	24,078.47	41,035.27
McKenzie and Burpee .....	6,652.61	7,086.47	1,478.92	15,218.00
Mills and Hardy .....	13,665.84	17,738.08	323.40	31,727.32
Monteith .....	8,442.74	7,686.10	—	16,128.84
Patterson .....	5,975.24	6,394.96	4,469.15	16,839.35
Pringle .....	6,975.84	8,115.96	6,694.25	21,786.05
Proudfoot .....	4,111.27	2,553.84	—	6,665.11
Spence .....	6,496.14	10,624.69	—	17,120.83
Wallbridge North .....	2,510.52	2,510.52	—	5,021.04
Wallbridge South .....	3,608.61	3,532.26	—	7,140.87
Wilson and McConkey .....	6,804.92	5,691.58	—	12,496.50
	<u>\$113,511.78</u>	<u>\$127,047.19</u>	<u>\$ 79,582.81</u>	<u>\$320,141.78</u>
<b>AINY RIVER</b>				
Dance .....	\$ 1,169.23	\$ 1,048.42	\$ —	\$ 2,217.65
Dewart .....	1,001.96	1,775.10	—	2,777.06
Miscampbell .....	2,331.43	5,091.30	—	7,422.73
Nelles .....	1,633.10	3,011.80	—	4,644.90
Sifton .....	1,273.65	1,428.23	—	2,701.88
Spohn .....	183.25	588.09	—	771.34
Sutherland .....	1,474.38	1,964.00	—	3,438.38
	<u>\$ 9,067.00</u>	<u>\$ 14,906.94</u>	<u>\$ —</u>	<u>\$ 23,973.94</u>
<b>ADBURY</b>				
Bigwood .....	\$ 10,862.24	\$ 7,846.95	\$ 117.88	\$ 18,827.07
Broder West .....	Cr. 422.05	1,012.29	—	590.24
Broder and Dill .....	10,788.06	8,626.65	—	19,414.71
Broder—Tilton .....	2,857.85	2,857.85	—	5,715.70
Burwash .....	Cr. 403.45	Cr. 400.00	—	Cr. 803.45
Cartier .....	175.85	170.58	—	346.43
Cleland, Dryden, Awrey and Hawley .....	2,968.31	4,560.99	2,253.97	9,783.27
Cleland, Dryden and Dill .....	1,206.76	3,908.02	242.21	5,356.99
Delamere, Hoskin and Cherriman .....	9,188.53	7,982.38	23,468.96	40,639.87
Dryden Centre .....	695.28	875.82	Cr. 119.28	1,451.82
Dryden South .....	Cr. 18.02	1,405.35	—	1,387.33
Foley .....	884.98	1,790.83	—	2,675.81
Foster and Truman .....	3,591.06	3,666.15	—	7,257.21
Henry .....	2,616.87	2,547.14	62.94	5,226.95
Loughrin S. Quarter .....	1,715.00	3,181.42	—	4,896.42
Louis and Truman .....	470.82	473.62	—	944.44
MacLennan .....	2,336.67	2,767.79	1,100.00	6,204.46
MacLennan West .....	1,005.26	1,015.15	—	2,020.41
McKinnon .....	354.69	546.44	—	901.13
Merritt .....	3,810.79	2,981.94	—	6,792.73
Norman .....	876.19	917.09	—	1,793.28
Scollard .....	1,717.11	1,755.35	—	3,472.46
Servois .....	458.66	912.57	—	1,371.23
Street, Scadding and Rathburn .....	2,597.83	2,503.43	—	5,101.26
	<u>\$ 60,335.29</u>	<u>\$ 63,905.80</u>	<u>\$ 27,126.68</u>	<u>\$151,367.77</u>

LOCATION AND NAME	STATUTE LABOUR BOARD EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>TIMISKAMING</b>				
Bayly.....	\$ 1,236.72	\$ 184.70	\$ —	\$ 1,421.42
Benoit and Maisonville.....	3,301.62	2,218.57	—	5,520.19
Cairo.....	794.74	1,425.93	—	2,220.67
Cane.....	4,760.99	3,900.21	—	8,661.20
Eby and Blaine.....	2,919.95	2,057.01	—	4,976.96
Eby North.....	512.24	424.90	—	937.14
Grenfell.....	657.74	565.25	—	1,222.99
Henwood.....	4,882.44	2,343.03	—	7,225.47
Ingram.....	3,245.51	3,521.95	—	6,767.46
Keefer.....	1,156.50	876.74	—	2,033.24
Lebel, Harvey and Kirkland.....	437.20	99.72	—	536.92
Lebel, King and Kirkland.....	2,125.54	3,344.10	—	5,469.64
Marquis N. and Otto S.W.....	2,215.92	2,862.41	—	5,078.33
Marquis South.....	637.55	882.47	—	1,520.02
Marter.....	3,585.25	3,001.65	—	6,586.90
Mordica, McEvay, McCann.....	2,125.42	2,290.38	—	4,415.80
Ossian.....	1,427.87	536.44	—	1,964.31
Otto.....	2,295.94	3,157.59	—	5,453.53
Pacaud.....	1,876.52	1,004.22	—	2,880.74
Pacaud and Catharine.....	1,027.27	783.98	—	1,811.25
Robillard.....	200.57	200.57	—	401.14
Savard.....	2,389.28	4,242.82	—	6,632.10
Sharpe.....	1,062.42	1,299.54	—	2,361.96
	<u>\$ 44,875.20</u>	<u>\$ 41,224.18</u>	<u>\$ —</u>	<u>\$ 86,099.38</u>
<b>THUNDER BAY</b>				
Armstrong.....	\$ 2,807.05	\$ 1,972.18	\$ —	\$ 4,779.23
Dawson Road Lots.....	4,619.16	6,547.16	14,862.77	26,029.09
Devon.....	1,627.90	1,617.77	—	3,245.67
Forbes.....	—	337.97	—	337.97
Goldie.....	2,780.79	335.87	—	3,116.66
Hardwick.....	3,987.12	4,440.97	—	8,428.09
Jacques.....	—	33.75	—	33.75
Kilkenny.....	169.59	100.16	—	269.75
Lybster.....	—	193.25	—	193.25
Lyon.....	—	278.39	—	278.39
Marks.....	—	422.00	—	422.00
Rosspport.....	961.90	228.81	—	1,190.71
Scoble.....	5,812.94	3,743.47	—	9,556.41
Sibley.....	—	179.58	—	179.58
Stirling.....	—	53.50	—	53.50
Strange.....	2,187.94	2,138.56	—	4,326.50
Upsala.....	—	85.05	—	85.05
	<u>\$ 24,954.39</u>	<u>\$ 22,708.44</u>	<u>\$ 14,862.77</u>	<u>\$ 62,525.60</u>
TOTAL STATUTE LABOUR BOARD ROAD EXPENDITURES.....	<u>\$439,560.24</u>	<u>\$512,141.86</u>	<u>\$235,608.88</u>	<u>\$1,187,310.98</u>

## APPENDIX No. 2c

## Unincorporated Townships Local Road Board Expenditures

## by Territorial Districts

## (Part XII, The Highway Improvement Act)

## For Year Ending March 31, 1967

LOCATION AND NAME	LOCAL ROADS BOARDS		DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
	EXPENDITURE (DEPOSIT) ORDINARY	DEPARTMENT EXPENDITURE ORDINARY		
ALGOMA				
Aberdeen and McMahon	\$ 2,200.00	\$ 4,849.86	\$ —	\$ 7,049.86
Colonization	250.00	Cr. 144.89	—	105.11
Fenwick et al	4,700.00	8,509.17	—	13,209.17
Gaudette and Hodgins	1,800.00	965.75	—	2,765.75
Hawk Junction	2,715.00	2,539.64	—	5,254.64
Lewis and Spragge	1,200.00	3,061.23	—	4,261.23
Patton and Montgomery	304.00	3,669.61	—	3,973.61
Plummer and Rose	3,800.00	8,557.80	—	12,357.80
Striker	1,001.74	4,550.04	—	5,551.78
Vankoughnet and Aweres	3,154.20	4,891.59	—	8,045.79
Whiskey Lake	250.00	1,258.86	—	1,508.86
	\$ 21,374.94	\$ 42,708.66	\$ —	\$ 64,083.60
DOCHRANE				
Fournier	\$ 1,800.00	\$ 6,121.39	\$ —	\$ 7,921.39
Frederickhouse	2,000.00	4,447.71	—	6,447.71
Halleburg	3,150.00	2,545.85	—	5,695.85
Hunta	1,800.00	7,581.45	—	9,381.45
Opastika	2,800.00	3,077.24	—	5,877.24
Val-Rita-Harty	7,040.00	18,487.86	—	25,527.86
	\$ 18,590.00	\$ 42,261.50	\$ —	\$ 60,851.50
KENORA				
Abrams Lake	\$ 250.00	\$ 736.19	\$ —	\$ 986.19
Ena Lake	341.76	1,814.74	—	2,156.50
Inglis Lake	953.35	2,875.97	1,000.00	4,829.32
Kenricia	300.00	688.62	—	988.62
Rushbay-Woodchuck	1,600.00	7,913.99	—	9,513.99
White Moose	1,190.00	4,747.04	—	5,937.04
	\$ 4,635.11	\$ 18,776.55	\$ 1,000.00	\$ 24,411.66
MANITOULIN				
Campbell	\$ 1,500.00	\$ 2,435.20	\$ —	\$ 3,935.20
Dawson	1,800.00	1,557.28	500.00	3,857.28
	\$ 3,300.00	\$ 3,992.48	\$ 500.00	\$ 7,792.48
MUSKOKA				
Hiawatha	\$ 440.00	\$ 1,398.64	\$ —	\$ 1,838.64
Sinclair	3,600.00	7,049.97	—	10,649.97
South Gibson	1,630.00	6,706.01	—	8,336.01
	\$ 5,670.00	\$ 15,154.62	\$ —	\$ 20,824.62
NIPISSING				
Badgerow No. 2	\$ 850.00	\$ 3,489.70	\$ 5,425.67	\$ 9,765.37
Bastedo	150.00	802.79	—	952.79
Crerar and N.W. Gibbons	300.00	6,441.89	2,395.62	9,137.51
Falconer et al	3,700.00	8,122.61	—	11,822.61
Grant-Fell	1,500.00	5,930.03	23,669.82	31,099.85
Hay Lake	455.00	2,530.28	—	2,985.28
Hugel and S.W. Badgerow	2,100.00	9,272.95	13,110.70	24,483.65
Phelps	2,000.00	9,447.52	—	11,447.52
Thorne	900.00	66.78	—	966.78
Wyse-Poitras	300.00	351.97	—	651.97
	\$ 12,255.00	\$ 46,456.52	\$ 44,601.81	\$103,313.33



LOCATION AND NAME	LOCAL ROADS BOARDS		DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
	EXPENDITURE (DEPOSIT) ORDINARY	DEPARTMENT EXPENDITURE ORDINARY		
PARRY SOUND				
Ahmik Lake.....	\$ 1,950.00	\$ 5,926.06	\$ —	\$ 7,876.06
Britt.....	6,000.00	12,677.27	847.43	19,524.70
East Bear Lake.....	330.00	844.15	—	1,174.15
Point Au Baril.....	500.00	1,927.17	500.00	2,927.17
South Conger.....	3,075.00	9,627.01	—	12,702.01
	<u>\$ 11,855.00</u>	<u>\$ 31,001.66</u>	<u>\$ 1,347.43</u>	<u>\$ 44,204.09</u>
RAINY RIVER				
Reef Point.....	\$ 580.00	\$ 2,216.20	\$ —	\$ 2,796.20
	<u>\$ 580.00</u>	<u>\$ 2,216.20</u>	<u>\$ —</u>	<u>\$ 2,796.20</u>
SUDBURY				
Armstrong Lake.....	\$ 500.00	\$ 1,117.86	\$ —	\$ 1,617.86
Burwash—Hendrie.....	2,400.00	7,694.13	500.00	10,594.13
Dieppe.....	350.00	1,585.26	—	1,935.26
Dill-Secord.....	900.00	3,197.54	15,934.62	20,032.16
Downes Lake.....	250.00	992.91	—	1,242.91
Dry Pine Bay.....	1,500.00	5,395.88	—	6,895.88
Dryden South.....	782.00	2,053.68	2,750.00	5,585.68
Fairbank Lake East.....	1,750.00	3,494.41	—	5,244.41
Hartley Bay.....	708.33	1,944.93	—	2,653.26
Hess.....	250.00	992.26	—	1,242.26
Long lake.....	5,500.00	11,036.11	2,043.79	18,579.90
Lorne.....	3,000.00	5,404.16	1,604.73	10,008.89
Loughrin.....	50.00	Cr. 30.00	—	20.00
Louise.....	1,800.00	5,387.33	824.84	8,012.17
Ministic Lake.....	480.00	2,035.29	—	2,515.29
Norman Townsite.....	535.00	Cr. 483.83	—	51.17
Shakespeare.....	900.00	3,852.98	51,245.95	55,998.93
Sunnyside.....	5,000.00	10,393.72	2,249.77	17,643.49
Wanapitea Lake West Bay.....	—	1,056.73	—	1,056.73
	<u>\$ 26,655.33</u>	<u>\$ 67,121.35</u>	<u>\$ 77,153.70</u>	<u>\$170,930.38</u>
THUNDER BAY				
Camp 25.....	\$ 173.95	\$ 730.59	\$ —	\$ 904.54
Crescent Point.....	170.00	619.48	—	789.48
Dawson Road.....	800.00	Cr. 651.48	—	148.52
Forbes.....	1,700.00	5,318.23	—	7,018.23
Fowler.....	3,000.00	13,522.15	—	16,522.15
Gorham.....	10,752.00	27,669.30	—	38,421.30
Hardwick.....	350.00	Cr. 206.24	—	143.76
Inwood.....	1,750.00	6,098.16	—	7,848.16
Jacques.....	3,100.00	9,851.45	—	12,951.45
Kabaigon Bay.....	315.00	629.63	—	944.63
Lybster.....	3,300.00	5,159.18	—	8,459.18
Lyon.....	800.00	1,494.95	—	2,294.95
Marks.....	2,350.00	2,294.48	—	4,644.48
Pearson.....	1,600.00	2,976.06	—	4,576.06
Pine Ridge.....	135.56	460.68	—	596.24
Portage Bay.....	220.00	862.15	—	1,082.15
Rinta's.....	295.00	653.86	—	948.86
Rossmere Bay.....	231.60	958.79	—	1,190.39
Shebandowan Lake.....	358.08	213.73	—	571.81
Sibley.....	1,750.00	3,924.58	—	5,674.58
Stirling.....	2,000.00	2,478.82	4,809.58	9,288.40
Upsala.....	1,950.00	5,079.68	9,694.22	16,723.90
Ware.....	9,500.00	26,904.69	—	36,404.69
West Loon.....	375.00	543.78	—	918.78
	<u>\$ 46,976.19</u>	<u>\$117,586.70</u>	<u>\$ 14,503.80</u>	<u>\$179,066.69</u>
TIMISKAMING				
Beauchamp.....	\$ 2,100.00	\$ 9,448.28	\$ —	\$ 11,548.28
Robillard.....	2,800.00	7,078.52	—	9,878.52
	<u>\$ 4,900.00</u>	<u>\$ 16,526.80</u>	<u>\$ —</u>	<u>\$ 21,426.80</u>
TOTAL LOCAL ROAD BOARD				
EXPENDITURES.....	<u>\$156,791.57</u>	<u>\$403,803.04</u>	<u>\$139,106.74</u>	<u>\$699,701.35</u>

## APPENDIX No. 2d

**Unincorporated Townships Special Road Expenditures for Settlers by Territorial Districts**  
**(Part XII, The Highway Improvement Act)**  
**For Year Ending March 31, 1967**

LOCATION AND NAME	LOCAL CONTRIBUTIONS ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>ALGOMA</b>				
Aberdeen.....	\$ 4.80	\$ 4.80	\$ 9,116.90	\$ 9,125.50
Aweres.....	50.00	50.00	1,697.78	1,797.78
Cobden.....	68.23	68.22	—	136.45
Fenwick.....	—	—	5,367.18	5,367.18
Fisher.....	12.50	12.50	—	25.00
Galbraith.....	54.15	54.15	1,483.07	1,591.37
Grasett.....	23.40	23.40	—	46.80
Herrick.....	12.50	12.50	—	25.00
Hodgins.....	—	—	712.32	712.32
Kars.....	—	—	1,449.21	1,449.21
Kehoe.....	28.00	28.00	—	56.00
Kirkwood.....	54.75	54.75	—	109.50
Morin.....	15.00	15.00	—	30.00
Parkinson.....	140.95	116.41	—	257.36
Plummer.....	—	—	2,155.49	2,155.49
Ranger Lake Area.....	—	—	14,609.23	14,609.23
Vankoughnet.....	—	—	959.97	959.97
Wells.....	137.16	100.00	—	237.16
	<u>\$ 601.44</u>	<u>\$ 539.73</u>	<u>\$ 37,551.15</u>	<u>\$ 38,692.32</u>
<b>COCHRANE</b>				
Boyce.....	\$ —	\$ 4,289.56	\$ 647.73	\$ 4,937.29
Brower.....	263.48	263.47	—	526.95
Calder.....	315.00	315.00	—	630.00
Casgrain.....	330.70	330.70	—	661.40
Clavet.....	—	7,625.87	1,151.53	8,777.40
Colquhoun.....	95.79	95.79	—	191.58
Clute.....	11.25	11.25	—	22.50
Devitt.....	421.83	421.83	—	843.66
Eilber.....	885.48	885.48	—	1,770.96
Fournier.....	43.00	43.00	—	86.00
Fox.....	652.45	652.45	—	1,304.90
Hanlan.....	708.81	708.81	—	1,417.62
Kendall.....	1,105.43	1,105.42	—	2,210.85
Kendrey.....	95.80	95.80	—	191.60
Kennedy.....	183.73	183.73	—	367.46
Lamarche.....	981.42	981.42	—	1,962.84
Lowther.....	485.56	485.56	—	971.12
Matheson.....	198.39	198.39	—	396.78
Moose.....	1,825.30	1,825.30	—	3,650.60
Munro.....	260.57	260.58	—	521.15
Newmarket.....	415.00	415.00	—	830.00
O'Brien.....	185.21	185.21	—	370.42
Owens.....	420.41	420.40	—	840.81
Warden.....	225.98	225.98	—	451.96
Way.....	1,636.87	1,636.87	—	3,273.74
Williamson.....	78.43	78.43	—	156.86
	<u>\$ 11,825.89</u>	<u>\$ 23,741.30</u>	<u>\$ 1,799.26</u>	<u>\$ 37,366.45</u>
<b>KENORA</b>				
Boys.....	\$ 772.86	\$ 770.97	\$ —	\$ 1,543.83
Buller.....	189.69	189.70	—	379.39
Drayton.....	200.00	200.00	—	400.00
Ewart.....	2,594.70	2,594.71	—	5,189.41
Gidley.....	282.60	282.61	—	565.21
Kirkup.....	165.72	165.72	—	331.44

LOCATION AND NAME	LOCAL CONTRIBUTIONS ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>KENORA (Cont'd)</b>				
MacNicol.....	145.77	145.77	—	291.54
Pellatt.....	1,474.52	1,474.53	—	2,949.05
Slaught.....	5.24	5.24	—	10.48
Smellie.....	1,154.07	1,154.07	—	2,308.14
Southworth.....	192.71	192.71	—	385.42
	<u>\$ 7,177.88</u>	<u>\$ 7,176.03</u>	<u>\$ —</u>	<u>\$ 14,353.91</u>
<b>NIPISSING</b>				
Badgerow.....	\$ 322.15	\$ 322.14	\$ —	\$ 644.29
Boulter.....	24.00	24.00	—	48.00
Gibbons.....	200.00	200.00	—	400.00
Gladman.....	246.58	246.57	—	493.15
Lyman.....	77.49	77.49	—	154.98
Merrick.....	72.56	72.55	—	145.11
Pedley.....	42.50	42.50	—	85.00
Poitras.....	43.39	43.38	—	86.77
Sabine.....	248.73	248.72	1,000.00	1,497.45
Strathcona.....	211.31	211.31	—	422.62
Strathy.....	285.69	285.68	—	571.37
	<u>\$ 1,774.40</u>	<u>\$ 1,774.34</u>	<u>\$ 1,000.00</u>	<u>\$ 4,548.74</u>
<b>PARRY SOUND</b>				
Lount.....	\$ 625.00	\$ 624.11	\$ —	\$ 1,249.11
Shawanaga.....	100.00	99.20	—	199.20
	<u>\$ 725.00</u>	<u>\$ 723.31</u>	<u>\$ —</u>	<u>\$ 1,448.31</u>
<b>RAINY RIVER</b>				
Bennett.....	\$ 162.39	\$ 162.38	\$ —	\$ 324.77
Farrington.....	91.03	91.02	—	182.05
Fleming.....	291.44	291.44	—	582.88
Trotter.....	118.53	118.52	—	237.05
Watten.....	25.50	25.20	—	50.70
	<u>\$ 688.89</u>	<u>\$ 688.56</u>	<u>\$ —</u>	<u>\$ 1,377.45</u>
<b>SUDBURY</b>				
Allen.....	\$ —	\$ 108.46	\$ —	\$ 108.46
Awrey.....	327.30	327.28	—	654.58
Broder.....	50.00	50.00	—	100.00
Burwash.....	23.45	23.45	500.00	546.90
Cascaden.....	268.97	268.97	—	537.94
Cleland.....	380.10	380.10	—	760.20
Curtin.....	782.02	782.01	—	1,564.03
Davis.....	41.25	41.25	—	82.50
Dill.....	227.56	229.23	—	456.79
Dryden.....	456.39	456.39	—	912.78
Foleyet.....	13.84	13.84	—	27.68
Garvey.....	10.87	10.87	—	21.74
Henry.....	131.50	131.50	—	263.00
Ivanhoe.....	13.84	13.84	—	27.68
Janes.....	208.75	341.89	—	550.64
Loughrin.....	250.00	250.00	—	500.00
Mongowin.....	572.97	572.97	—	1,145.94
Morgan.....	158.45	158.45	—	316.90
Noble.....	582.20	582.21	—	1,164.41
Secord.....	889.04	889.54	—	1,778.58
Street.....	836.27	836.28	—	1,672.55
Togo.....	582.19	582.20	—	1,164.39
	<u>\$ 6,806.96</u>	<u>\$ 7,050.73</u>	<u>\$ 500.00</u>	<u>\$ 14,357.69</u>

LOCATION AND NAME	LOCAL CONTRIBUTIONS ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>TIMISKAMING</b>				
Barber.....	\$ 120.83	\$ 120.83	\$ —	\$ 241.66
Bryce.....	—	—	2,022.86	2,022.86
Charters.....	343.91	343.91	47.04	734.86
Corkill.....	343.89	343.89	47.03	734.81
Firstbrook.....	51.22	51.23	—	102.45
Grenfell.....	20.78	20.78	—	41.56
Haultain.....	176.51	176.51	—	353.01
Henwood.....	—	—	2,949.26	2,949.26
Hillary.....	87.03	87.03	—	174.06
Ingram.....	—	—	1,392.40	1,392.40
Lawson.....	343.89	343.89	2,515.95	3,203.73
Leith.....	343.88	343.89	—	687.78
Marter.....	—	—	23,880.37	23,880.37
Milner.....	49.01	49.01	—	98.02
Nicol.....	434.61	434.61	—	869.22
Otto.....	—	—	239.60	239.60
Pense.....	22.95	22.95	—	45.90
Robillard.....	—	—	392.28	392.28
Savard.....	—	—	2,803.92	2,803.92
	<u>\$ 2,338.51</u>	<u>\$ 2,338.53</u>	<u>\$ 36,290.71</u>	<u>\$ 40,967.75</u>
<b>THUNDER BAY</b>				
Armstrong.....	\$ —	\$ —	\$ 4,398.94	\$ 4,398.94
Blackwell.....	5.97	5.96	—	11.93
Boucher.....	34.95	34.95	—	69.90
Conacher.....	27.09	27.08	2,920.00	2,974.17
Forbes.....	—	—	5,000.32	5,000.32
Fowler.....	—	—	20,880.26	20,880.26
Goldie.....	—	—	1,852.54	1,852.54
Golding.....	13.71	13.70	—	27.41
Gorham.....	—	—	12,833.13	12,833.13
Haines.....	282.72	282.72	293.60	859.04
Inwood.....	—	—	6,075.51	6,075.51
Jacques.....	—	—	3,979.65	3,979.65
Lybster.....	—	—	4,851.31	4,851.31
Marks.....	—	—	2,309.07	2,309.07
Pearson.....	—	—	4,875.93	4,875.93
Pic.....	86.07	95.21	—	181.28
Scoble.....	—	—	3,001.78	3,001.78
Sibley.....	5.59	5.58	3,014.86	3,026.03
Upsala.....	9,299.69	9,299.68	7,843.50	26,442.87
Ware.....	—	—	8,798.63	8,798.63
	<u>\$ 9,755.79</u>	<u>\$ 9,764.88</u>	<u>\$ 92,929.03</u>	<u>\$112,449.70</u>
<b>TOTAL ROAD EXPENDITURES FOR SETTLERS.....</b>	<u>\$ 41,694.76</u>	<u>\$ 53,797.41</u>	<u>\$170,070.15</u>	<u>\$265,562.32</u>



## APPENDIX No. 2e

**Unincorporated Townships Special Road Expenditure for Indian Reserves  
by Territorial Districts  
(Part XII, The Highway Improvement Act)  
For Year Ending March 31, 1967**

LOCATION AND NAME	INDIAN RESERVES EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	TOTAL EXPENDITURE
<b>KENORA</b>			
Eagle Lake 27.....	\$ 209.85	\$ 209.85	\$ 419.70
Islington 29.....	226.62	226.61	453.23
Kenora 38B.....	249.54	124.76	374.30
Osnaburg 63B.....	33.23	33.23	66.46
Rat Portage 38A.....	574.45	574.45	1,148.90
Shoal Lake 39A.....	2,894.07	2,894.07	5,788.14
Wabigoon Lake 27.....	147.13	147.13	294.26
Whitefish Bay 32A.....	2,001.91	2,001.91	4,003.82
Whitefish Bay 34A.....	43.50	43.50	87.00
	<u>\$ 6,380.30</u>	<u>\$ 6,255.51</u>	<u>\$ 12,635.81</u>
<b>NIPISSING</b>			
Nipissing 10.....	\$ 1,157.89	\$ 1,157.88	\$ 2,315.77
Nipissing 10-Adjustment.....	—	1,157.89	1,157.89
	<u>\$ 1,157.89</u>	<u>\$ 2,315.77</u>	<u>\$ 3,473.66</u>
<b>PARRY SOUND</b>			
Dokis 9.....	\$ 13,548.44	\$ 13,548.43	\$ 27,096.87
<b>RAINY RIVER</b>			
Big Island Mainland 93.....	\$ 33.11	\$ 33.10	\$ 66.21
Rainy Lake 16A.....	90.58	90.59	181.17
Rainy Lake 17A.....	170.48	170.48	340.96
Rainy Lake 18B.....	118.66	118.66	237.32
Rainy Lake 26A.....	93.12	93.11	186.23
Seine River 23A.....	6,010.45	6,010.44	12,020.89
	<u>\$ 6,516.40</u>	<u>\$ 6,516.38</u>	<u>\$ 13,032.78</u>
<b>SUDBURY</b>			
Mattagami 71.....	\$ 582.21	\$ 582.21	\$ 1,164.42
<b>THUNDER BAY</b>			
Osnaburg 63A.....	\$ 33.23	\$ 33.23	\$ 66.46
<b>TOTAL ROAD EXPENDITURES FOR INDIAN RESERVES</b>	<u>\$ 28,218.47</u>	<u>\$ 29,251.53</u>	<u>\$ 57,470.00</u>

## APPENDIX NO. 3

## Department Expenditures by Highways

April 1, 1966 to March 31, 1967

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
<b>KING'S HIGHWAYS</b>					
2	Quebec Boundary-Windsor.....	428.6	\$3,606,354.47	\$1,980,798.71	\$5,587,153.18
2A	Hwy. 401 (M.-C.F.)-Hwy. 2.....	1.3	1,413.27	18,609.13	20,022.40
3	Fort Erie-Windsor.....	241.0	1,506,708.55	820,229.01	2,326,937.56
3A	Hwy. 58-Hwy. 3.....	9.5	3,315.52	51,812.13	55,127.65
3B	Hwy. 3-Windsor.....	—	4,540.28	7,912.37	12,452.65
3C	Fort Erie-Ridgeway.....	7.1	113.31	41,746.75	41,860.06
4	Port Stanley-Flesherton.....	131.0	1,219,844.27	564,922.50	1,784,766.77
5	Toronto-Paris.....	54.6	123,072.14	345,075.60	468,147.74
6	Port Dover-Tobermory.....	200.8	1,323,741.02	683,975.83	2,007,716.85
7	Ottawa-Sarnia.....	437.4	2,346,724.09	1,970,549.78	4,317,273.87
7A	Hwy. 115-Manchester.....	30.7	19,277.73	116,871.73	136,149.46
8	Hwy. 21-Niagara Falls [7].....	100.3	6,421,772.62	449,531.40	6,871,304.02
8A	Queenston-St. Davis.....	2.4	1,058.00	14,085.90	15,143.90
9	Hwy. 11-Kincardine.....	107.0	589,620.73	371,199.42	960,820.15
10	Port Credit-Owen Sound.....	89.3	851,549.65	418,276.32	1,269,825.97
11	Toronto-Rainy River.....	1,186.5	7,045,081.41	3,882,950.70	10,928,032.11
11A	Port Arthur-Sistonens Corners.....	20.5	51,011.51	66,574.79	117,586.30
12	Hwy. 401-Hwy. 27 [7].....	71.0	824,037.13	372,082.81	1,196,119.94
14	Bloomfield-Marmora.....	41.2	56,229.54	129,615.86	185,845.40
15	Kingston-Ottawa [7].....	84.2	24,748.49	233,361.26	258,109.75
16	Johnstown-Ottawa.....	50.0	164,854.70	131,940.43	296,795.13
17	Quebec Border-Manitoba Border [11]...	1,285.4	9,881,696.88	3,639,032.04	13,520,728.92
18	Leamington-Windsor.....	38.4	784,225.49	79,362.31	863,587.80
18A	Kingsville-Hwy. 18.....	19.4	1,720.41	31,617.43	33,337.84
19	Port Burwell-Tralee.....	69.4	41,858.68	207,959.49	249,818.17
20	Niagara Falls-Hamilton.....	40.5	149,714.99	210,175.27	359,890.26
21	Morpeth-Owen Sound.....	177.2	120,070.23	478,577.53	598,647.76
22	London-Hwy. 7.....	27.5	27,107.00	58,933.36	86,040.36
23	Elginfield-Teviotdale.....	55.9	739,386.83	181,411.17	920,798.00
24	Port Dover-Collingwood.....	101.2	856,632.37	332,093.84	1,188,726.21
24A	Paris-Galt.....	31.8	969,891.85	84,627.96	1,054,519.81
25	Q.E.W.-Ospringle.....	25.6	25,693.40	107,272.06	132,965.46
26	Barrie-Owen Sound.....	64.6	391,007.29	229,006.04	620,013.33
27	Long Branch-Penetanguishene.....	87.4	3,273,583.03	442,568.93	3,716,151.96
28	Port Hope-Bancroft.....	82.6	1,062,855.09	408,277.97	1,471,133.06
29	Brockville-Arncliffe [15].....	52.6	87,292.40	132,492.75	219,785.15
30	Brighton-Havelock.....	29.5	63,532.20	98,897.35	162,429.55
31	Morrisburg-Ottawa.....	41.0	305,870.66	136,414.11	442,284.77
32	Gananoque-Hwy. 15.....	11.3	—	41,905.62	41,905.62
33	Kingston-Stirling.....	74.0	333,390.70	220,680.92	554,071.62
34	Lancaster-Hawkesbury.....	34.1	6,864.17	98,828.74	105,692.91
35	Dwight-Huntsville.....	124.0	972,426.48	370,487.10	1,342,913.58
35A	Fenelon Falls-Hwy. 35.....	2.0	—	3,775.11	3,775.11
36	Burleigh Falls-Lindsay.....	44.4	41,694.83	95,082.32	136,777.15
37	Belleville-Hwy. 7.....	26.3	75,937.28	84,700.25	160,637.53
38	Hwy. 2-Hwy. 7.....	44.1	40,640.04	118,555.40	159,195.44
39	Hwy. 2-Windsor.....	11.1	99,440.55	23,756.61	123,197.16
40	Chatham-Sarnia.....	45.5	173,161.22	126,193.85	299,355.07
40A	Hwy. 40-Hwy. 402.....	4.9	9,589.59	—	9,589.59
40C	Vidal St.-Errol Rd. (Sarnia).....	.5	5.19	312.57	317.76
41	Napaneer-Pembroke.....	132.6	610,045.42	389,696.11	999,741.53
42	Fortthornton-Westport [29].....	31.3	39,835.38	81,977.79	121,813.17
43	Alexandria-Perth.....	89.1	136,794.15	283,135.99	419,930.14
44	Almonte-Hwy. 17.....	8.6	48,526.92	17,181.56	65,708.48
45	Cobourg-Norwood.....	31.4	40,911.21	103,517.05	144,428.26
46	Hwy. 7-Coboconk.....	40.2	382,462.95	80,636.34	463,099.29
47	Jct. Hwys. 7 & 12-Hwy. 48.....	17.8	57,211.40	101,165.71	158,377.11

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
48	Steeles Ave. (Toronto) Hwy. 46 [12].....	63.0	\$ 564,161.44	\$311,212.21	\$ 875,373.65
49	Pictou-Hwy. 401 [2].....	11.3	504,840.00	31,055.04	535,895.04
50	Metro Toronto North Limits-Hwy. 9.....	18.5	64,924.46	118,288.43	183,212.89
52	Hwy. 2-Wentworth Cty. Line.....	15.4	25,652.86	61,807.83	87,460.69
53	Hwy. 20-Eastwood.....	27.3	478,068.70	112,679.35	590,748.05
54	Cayuga-Cainsville.....	24.7	32,876.13	112,065.28	144,941.41
56	Jct. Hwys. 20 & 53-Hwy. 3.....	14.6	1,023.42	57,840.66	58,864.08
57	Hwy. 3A-Bismark.....	8.9	—	28,684.11	28,684.11
58	Hwy. 3-St. Catharines.....	14.8	8,350,899.74	65,311.95	8,416,211.69
59	Long Point Park-Shakespeare.....	65.6	207,006.18	169,814.14	376,820.32
60	Hwy. 17-Huntsville.....	146.8	1,733,319.86	329,527.48	2,062,847.34
61	Fort William-U.S.A. Bdry.....	33.8	20,572.52	57,976.75	78,549.27
62	Hwy. 14-Quebec Bdry. [60].....	132.7	567,325.45	380,708.17	948,033.62
63	North Bay-Timiskaming.....	39.4	785,338.37	120,529.61	905,867.98
64	Hwy. 69-Hwy. 11.....	81.1	455,090.00	220,091.05	675,181.05
65	Quebec Bdry.-Matachewan.....	79.9	153,684.83	207,273.17	360,958.00
66	Quebec Bdry.-Hwy. 65.....	60.9	17,872.43	132,364.66	150,237.09
67	Iroquois Falls-Hwy. 101.....	20.4	182,814.13	70,704.46	253,518.59
68	S. Baymouth-Hwy. 17 (Espanola).....	78.9	544,230.08	298,989.09	843,219.17
69	Hwy. 12-Capreol [11].....	196.3	1,132,306.56	655,584.63	1,787,891.19
70	Jct. Hwys. 6 & 21-Hepworth.....	9.1	158,286.82	23,140.31	181,427.13
71	Fort Frances-Hwy. 17 [11].....	99.7	808,556.87	146,160.88	954,717.75
72	Dinorwic-Sioux Lookout.....	43.5	1,049,877.40	68,990.43	1,118,867.83
73	Port Bruce-Dorchester.....	23.6	9,886.10	53,407.27	63,293.37
74	New Sarum-Nilestown.....	13.2	32,430.98	32,310.75	64,741.73
76	Hwy. 3-Hwy. 2.....	11.3	513.40	20,403.86	20,917.26
77	Hwy. 3-Hwy. 401.....	14.0	866,218.59	22,137.44	888,356.03
78	Dresden-Wallaceburg.....	9.5	7,827.08	16,092.45	23,919.53
79	Hwy. 2-Hwy. 7.....	27.6	231,096.74	93,138.51	324,235.25
80	Strathburn-Hwy. 40.....	42.2	6,992.81	93,857.43	100,850.24
81	Delaware-Grand Bend.....	38.2	924,483.30	102,120.29	1,026,603.59
82	Hwy. 7-Hwy. 21.....	5.5	293.63	15,521.34	15,814.97
83	Russeldale-Brewster.....	24.1	35,367.31	73,916.14	109,283.45
84	Hensall-St. Joseph's.....	10.7	8,557.48	31,307.73	39,865.21
85	Kitchener-Elmira.....	8.7	18,564.58	27,576.30	46,140.88
86	Hwy. 7-Amberly.....	78.4	594,817.03	388,466.25	983,283.28
87	Harriston-Bluevale.....	19.7	7,782.25	57,250.86	65,033.11
88	Bradford-Bonehead.....	5.0	267.92	19,545.30	19,813.22
89	Hwy. 400-Hwy. 23.....	63.7	108,872.40	344,427.60	453,300.00
90	Barrie-Angus.....	10.0	209,508.17	43,437.83	252,946.00
91	Stayner-Duntroon.....	5.0	436,931.42	9,359.09	446,290.51
92	Elmvale-Wasaga Beach.....	7.9	1,421.40	53,855.13	55,276.53
93	Crownhill-Waverly.....	17.5	4,504.01	58,523.95	63,027.96
94	Callander-Hwy. 17.....	5.5	14,237.81	18,578.49	32,816.30
95	Alexandria Pt.-Hwy. 96.....	7.1	—	28,775.90	28,775.90
96	Port Metcalf-West End of Wolfe Is.....	20.4	24,812.29	72,375.23	97,187.52
97	Freelton-Hickson.....	39.3	170,671.10	153,007.44	323,678.54
98	Blenheim-Windsor.....	53.3	6,695.74	129,665.08	136,360.82
99	Dundas-Hwy. 24.....	5.9	127,690.44	71,071.08	198,761.52
101	Quebec Boundary-Hwy. 17 (Wawa).....	290.0	2,365,439.83	589,312.80	2,954,752.63
103	Hwy. 12-Hwy. 69 (Footes Bay).....	29.9	3,205.91	636,808.50	640,014.41
104	Hwy. 9-Grand Valley.....	1.8	675.40	6,747.41	7,422.81
105	Hwy. 17-Red Lake.....	108.4	1,532,081.45	123,322.74	1,655,404.19
106	Dale-Welcome.....	2.6	47.13	11,101.23	11,148.36
107	Hwy. 18-Ruthven.....	1.0	25.95	3,161.43	3,187.38
108	Hwy. 17-Hwy. 639 (Quirke Lake).....	26.0	4,748.24	97,397.60	102,145.84
112	Hwy. 11-Hwy. 66.....	12.4	1,095.55	28,464.33	29,559.88
114	Maidstone-Hwy. 98.....	1.2	28.54	1,322.03	1,350.57
115	Hwy. 401 (M.-C.F.)-Peterborough.....	17.1	22,852.54	74,030.36	96,882.90
116	Patricia-Hudson.....	9.9	10,393.47	27,386.12	37,779.59

HWY. No.	LOCATION	MILI- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
117	Steeles Ave. (Toronto)-Hwy. 7....	1.3	\$ 72.63	\$ 6,721.29	\$ 6,793.92
118	Glen Orchard-Dorset...	49.7	809,198.27	105,567.87	914,766.14
119	Hwy. 17-Richan.....	13.9	33,150.15	22,134.27	55,284.42
120	Hwy. 400-Jct. Hwys. 11 & 93..	0.7	—	5,229.42	5,229.42
121	Hwy. 28-Hwy. 35 (Fenelon Falls)	81.8	163,575.64	216,731.09	380,306.73
122	Q.E.W. (N. of Clarkson)-Q.E.W. (Oakville).....	5.1	1,395,549.93	47,416.52	1,442,966.45
123	Hwy. 11-North Bay Airport..	4.5	45,246.38	16,580.04	61,826.42
124	Sundridge-Parry Sound.....	49.1	416,302.25	136,830.34	553,132.59
125	Hwy. 105-Red Lake Airport.....	7.7	21,275.41	11,995.00	33,270.41
126	Hwy. 401 (M.-C.F.)-Hwy. 2 (London)..	3.2	419,933.11	17,494.13	437,427.24
127	Maynooth Whitney	33.2	20,497.71	80,258.23	100,755.94
128	Kenora-Redditt.....	17.7	8,284.85	41,721.10	50,005.95
129	Thessalon-Chapleau.....	139.6	658,199.50	349,982.78	1,008,182.28
130	Port Arthur-Hwy. 61..	17.6	15,130.71	43,912.16	59,042.87
132	Renfrew-Hwy. 41.....	17.6	—	40,273.58	40,273.58
133	Hwy. 33 (Millhaven)-Hwy. 401 (M.-C.F.).....	6.3	617,595.36	13,924.21	631,519.57
135	Hwy. 401 (M.-C.F.)-Hwy. 2 (London)..	3.8	32.13	15,433.25	15,465.38
136	Hwy. 24-Orangeville	7.8	21,713.02	37,801.22	59,514.24
137	Hwy. 401 (M.-C.F.)-Thousand Island Bridge	1.1	331.06	5,027.89	5,358.95
138	Cornwall-Monkland Station.....	—	28,091.92	—	28,091.92
144	Sudbury-Hwy. 101 (Near Timmins).....	78.1	2,900,129.96	154,869.33	3,054,999.29
400	Toronto Coldwater	74.6	2,055,785.13	810,717.93	2,866,503.06
401	(M.-C.F.) Quebec Border-Windsor...	516.1	38,732,433.79	4,298,856.15	43,031,289.94
402	Hwy. 7-Blue Water Bridge.....	3.7	302,163.12	37,228.19	339,391.31
403	Q.E.W.-Hwy. 2 Brantford	14.2	3,378,433.65	138,911.31	3,517,344.96
404	Extension of Don Valley Parkway....	—	66,267.41	—	66,267.41
405	Q.E.W.-International Bridge (Queenston)....	5.5	6,053.87	47,813.87	53,867.74
406	Hwy. 3—Q.E.W. (St. Catharines)..	3.2	346,469.08	27,414.85	373,883.93
407	Jct. Hwys. 35 & 115-Hwy. 27	—	95,504.79	—	95,504.79
416	International Bridge (Johnstown)- Ottawa	—	12,830.78	—	12,830.78
417	Ottawa-Quebec Border (Proposed).....	—	50,050.59	—	50,050.59
QEW	Toronto-Fort Erie	95.3	9,514,900.00	1,377,689.27	10,892,589.27
TOTAL EXPENDITURE ALLOCATED TO KING'S HIGHWAYS			\$135,801,113.15	\$37,290,949.35	\$173,092,062.50
SECONDARY HIGHWAYS					
500	Denbigh-Bancroft.....	38.2	\$ 32,726.12	\$100,368.53	\$133,094.65
501	Hwy. 103-Honey Harbour	9.2	7,897.26	46,678.91	54,576.17
502	Napanee Marysville	8.7	3,746.68	20,436.87	24,183.55
503	Tory Hill-Kirkfield	76.4	263,163.58	229,038.05	492,201.63
504	Hwy. 620-Apsley.....	16.3	70,591.21	42,948.52	113,539.73
505	Hwy. 46-Uphill.....	11.8	33,813.06	29,811.16	63,624.22
506	Hwy. 41-Plevna.....	20.9	215,776.16	41,081.86	256,858.02
507	Hwy. 28 (Lakefield)-Hwy. 503 (Gooderham)	39.6	169,927.51	132,557.59	302,485.10
508	Burnstown-Black Donald Mines	25.8	264,398.55	76,934.21	341,332.76
509	Hwy. 7-Snow Road Station	13.1	62,926.80	57,450.36	120,377.16
510	Magnetewan-Hwy. 124	1.9	108.91	3,615.62	3,724.53
511	Calabogie-Brightside.....	20.5	527.15	25,599.33	26,126.48
512	Eganville-Jct. Hwys. 60 & 62.....	29.4	84,675.63	69,978.79	154,654.42
513	Hwy. 132 (Dacre)-C.N.R. Crossing East of Caldwell.....	9.8	10,617.16	22,894.19	33,511.35
514	Jct. Hwys. 35 & 60-Interlaken	10.0	1,276.46	31,444.08	32,720.54
515	Hwy. 512-Combermere	28.0	71,603.82	75,547.51	147,151.33
516	Windermere-Port Sidney	16.0	37,719.24	75,088.39	112,807.63
517	Hwy. 62-New Carlow....	10.4	2,366.48	15,501.14	17,867.62
518	Sandlake-Hwy. 69	54.2	78,408.63	176,778.36	255,186.99



Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
519	Hwy. 121-Redstone Lake.....	34.0	\$176,086.97	\$ 95,642.24	\$271,729.21
520	Burks Falls-Ardbeg.....	32.0	70,562.67	106,375.00	175,937.67
521	Hwy. 62 (S. of Round Lake)-to N. of Round Lake.....	13.2	16,359.04	31,242.36	47,601.40
522	Hwy. 11 (Trout Creek)-West of Loring.....	43.0	407,037.95	118,542.23	525,580.18
523	Hwy. 60-Lyell Twp. Line.....	13.5	2,458.71	28,088.68	30,547.39
524	Hwy. 522-Hwy. 534.....	3.1	—	9,036.95	9,036.95
525	Gravenhurst-Muskoka Lake (Sanitarium).....	1.5	—	2,941.58	2,941.58
526	Hwy. 69-Britt.....	2.3	7.25	10,893.23	10,900.48
527	Baysville-Huntsville.....	14.5	46.92	29,555.02	29,601.94
528	Noelville-Wolseley.....	8.3	13,247.69	30,604.22	43,851.91
528A	Wolseley Bay-Pine Cove Landing.....	3.3	—	8,815.22	8,815.22
529	Hwy. 69-Hwy. 69 (Magnetawan).....	15.9	—	44,743.03	44,743.03
529A	Hwy. 529-Bayfield Wharf Road.....	3.0	2,662.84	8,132.80	10,795.64
530	Hwy. 35-Hwy. 519.....	12.5	51,326.46	32,135.69	83,462.15
531	Hwy. 17-Bonfield.....	2.3	25,245.80	6,319.31	31,565.11
532	Bracebridge-Hwy. 69.....	39.4	154,205.65	94,846.56	249,052.21
533	Mattawa-Hwy. 63.....	32.4	172,734.77	72,287.30	245,022.07
534	Powassan-Restoule.....	21.9	6,171.91	69,658.45	75,830.36
535	Noelville-Riviere Veuve.....	29.9	70,426.29	80,585.24	151,011.53
536	Creighton Mines-Hwy. 17.....	3.8	71.21	11,211.74	11,282.95
537	Hwy. 69-Hwy. 17 (Wanapitei).....	12.2	83,816.59	45,790.51	129,607.10
538	Algoma Mines Loop.....	4.1	10,285.64	9,259.86	19,545.50
539	Warren-Field.....	24.8	66,794.29	89,375.75	156,170.04
539A	Hwy. 539-River Valley.....	0.8	—	2,543.74	2,543.74
540	Little Current-Meldrum Bay.....	84.9	124,916.09	330,548.04	455,464.13
540A	Hwy. 540-Barrie Island.....	2.5	365.65	7,700.52	8,066.17
541	Hwy. 17 (Sudbury)-Skead.....	15.6	98,386.07	72,669.11	171,055.18
541A	Hwy. 541-Falconbridge.....	1.9	85.76	4,934.15	5,019.91
542	Gore Bay-Hwy. 68.....	44.8	344,292.97	135,101.45	479,394.42
542A	Hwy. 542-Tehkummah.....	1.4	—	3,719.12	3,719.12
543	Long Lake-Hwy. 69.....	5.0	48,201.27	17,327.10	65,528.37
544	Hwy. 144-Levack.....	1.3	2,443.30	5,547.96	7,991.26
545	Bailey's Corners-Milnet.....	17.0	399.67	47,701.84	48,101.51
546	Iron Bridge-Mount Lake.....	47.8	51,163.31	72,283.34	123,446.65
547	Hwy. 101 (Wawa)-Hawk Junction.....	3.4	46,738.60	4,085.82	50,824.42
548	Hwy. 17-Hilton Beach Turn-off.....	45.6	62,979.32	110,134.63	173,113.95
549	Whitefish-Lake Panache.....	9.1	110,852.92	43,790.91	154,643.83
550	Sault Ste. Marie-Gros Cap.....	6.5	94,472.21	27,068.47	121,540.68
551	Excelsior-Providence Bay.....	11.6	8,519.19	43,207.13	51,726.32
552	Island Lake-Goulais Bay.....	13.9	8,410.57	33,643.86	42,054.43
553	Massey-Richie Falls Camp.....	50.2	13,488.96	68,141.01	81,629.97
554	Parkinson-Hwy. 129.....	10.9	25,343.41	21,789.38	47,132.79
555	Hwy. 557-Magog Lake.....	7.0	15,179.52	19,593.42	34,772.94
556	Heyden-Goulais Game Reserve.....	26.3	510,441.01	76,170.59	586,611.60
557	Blind River-Matinenda Lake.....	12.6	18,644.96	36,932.13	55,577.09
558	Haileybury-Montreal River.....	16.9	13,037.75	35,931.08	48,968.83
559	Nobel-Shawanaga.....	13.5	73,837.23	31,974.93	105,812.16
560	Englehart-Gogama.....	143.4	203,266.54	344,394.60	547,661.14
560A	Westree-Hwy. 560.....	6.2	—	8,205.96	8,205.96
561	Bruce Mines-Hwy. 638.....	13.5	88,579.02	50,496.56	139,075.58
562	Hwy. 65-Thornloe.....	9.0	4,304.32	22,359.02	26,663.34
563	Hwy. 17-Batchawana Bay.....	3.4	42,557.23	10,020.26	52,577.49
564	Hwy. 112-Blanche River.....	9.8	—	15,118.35	15,118.35
565	Hwy. 550-Pte. Aux Pins.....	1.0	456.53	2,835.33	3,291.86
566	Matachewan-Ashley Mines.....	16.4	13,611.94	31,086.99	44,698.93
567	Hwy. 11-Silver Centre.....	21.7	23,075.76	45,552.44	68,628.20
568	Hwy. 11-Kenogami.....	1.0	—	2,645.95	2,645.95
569	Hwy. 11-Jct. Hwys. 11 and 624.....	17.5	7,231.63	39,426.94	46,658.57
570	Hwy. 11-Sesekinika.....	1.9	—	3,800.62	3,800.62

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
571	Hwy. 562-Earleton	3.7	\$ —	\$ 7,917.57	\$ 7,917.57
572	Hwy. 11 (Ramore)—Hwy. 101	10.3	15,240.11	17,178.64	32,418.75
573	Hwy. 560—Jct. Hwys. 11 and 112	12.5	—	27,669.44	27,669.44
574	Cochrane-Norembea	18.0	169,327.37	85,875.59	255,202.96
575	Hwy. 101 (Night Hawk Centre) Southerly	3.0	7,810.28	5,405.04	13,215.32
576	Kam-Kotia Mine—Hwy. 101	15.2	732,411.74	26,322.90	758,734.64
577	Shellington—Iroquois Falls	15.8	81,977.07	41,217.58	123,194.65
578	Hwy. 11 (Nellie Lake)—Iroquois Falls	5.1	115,908.13	21,812.16	137,720.29
579	Cochrane-Gardiner	21.8	48,451.32	74,979.06	123,430.38
580	Hwy. 11 Lake Nipigon	7.7	239.46	7,684.31	7,923.77
581	Hwy. 11 (Moonbeam)—Remi Lake	3.1	5,868.07	7,395.06	13,263.13
582	Hwys. 11 & 17—Hurkett—Hwys. 11 & 17	4.0	392.72	6,024.32	6,417.04
583	Lac Ste. Therese—Mead	30.1	131,075.99	126,746.63	257,822.62
584	Hardrock Mine—Nakina	42.5	11,239.49	66,071.23	77,310.72
584A	Hwy. 11—Hwy. 584	2.4	—	2,811.64	2,811.64
585	Nipigon—Pine Portage	22.9	335.79	54,490.70	54,826.49
586	Hwy. 11—Lower Shebandown Lake	3.3	748.26	3,944.37	4,692.63
587	Loon-Silver Islet	26.0	26,154.83	66,170.95	92,325.78
588	Hwys. 11 & 17—Round Lake Road	34.8	111,684.89	95,668.02	207,352.91
589	Hwys. 11A & 17A—Dog Lake Road	18.7	18,589.05	46,803.95	65,393.00
590	Hwy. 130—Hwy. 588	25.1	49,392.40	81,146.21	130,538.61
591	Sec. Hwy. 589 Northerly	4.9	18,945.89	17,392.10	36,337.99
592	Hwy. 11 (Novar)—Hwy. 11 (N. of Hwy. 518)	10.2	1,354.27	35,492.63	36,846.90
593	Hwy. 588—Hwy. 61	29.9	8,424.10	39,424.09	47,848.19
594	Dryden—Hwy. 17	20.6	4,915.61	47,840.58	52,756.19
595	Hwy. 590—Hwy. 597	25.3	25,176.64	52,386.68	77,563.32
596	Hwy. 17—Minaki	29.6	19,432.79	58,021.56	77,454.35
597	Hwy. 608—Pardee	9.5	3,943.28	17,045.67	20,988.95
598	Hwy. 128—Hwy. 604	2.7	—	10,580.16	10,580.16
599	Ignace-Badesdawa Lake	185.2	33,527.83	215,987.83	249,515.66
600	Rainy River—Hwy. 71	53.9	6,410.53	80,201.78	86,612.31
601	Hwy. 17 (Through Dryden)—Hwy. 17	15.5	23,246.36	31,903.31	55,149.67
602	Fort Frances—Emo	29.1	90,405.33	29,907.43	120,312.76
603	Borups Corners—Dymont Stn.	2.8	164.97	4,761.13	4,926.10
604	Hwy. 17—Kenora Airport	5.5	517.10	11,099.61	11,616.71
605	Hwy. 17—Rugby Lake	7.7	16,490.64	26,754.36	43,245.00
606	Hwy. 17—Markstay	1.0	11,672.54	2,330.80	14,003.34
607	Hwy. 64—Hwy. 69	6.3	18,090.13	21,000.26	39,090.39
607A	Hwy. 607—French River	1.5	28.97	3,432.69	3,461.66
608	Moose Hill—Hwy. 595	11.9	49,786.30	25,723.61	75,509.91
609	Clay Lake—Hwy. 105	10.1	13,999.74	10,108.01	24,107.75
610	Hwy. 67—Hwy. 101	12.3	77,221.64	26,961.71	104,183.35
611	Hwy. 602—Burrllis/Miscampbell Twp. Line	12.5	12,684.92	19,518.94	32,203.86
612	Hwy. 103—Hwy. 69	7.0	212.80	15,258.67	15,471.47
613	Big Fork—Lake Despair	25.5	—	45,454.44	45,454.44
614	Hwy. 17—Manitouwadge	36.4	996,762.85	109,167.50	1,105,930.35
615	Hwy. 71—Burditt Lake	13.6	14,164.31	16,971.13	31,135.44
616	Hwy. 101—Polomar	2.0	7,116.60	2,385.40	9,502.00
617	Stratton—Hwy. 600	14.4	93.47	33,641.33	33,734.80
618	Red Lake—Madsen Lake	8.8	—	11,991.22	11,991.22
619	Hwy. 11—Hwy. 621	25.3	72,932.99	31,669.77	104,602.76
620	Hwy. 62—Hwy. 28	25.4	140,602.27	67,918.13	208,520.40
620A	Hwy. 620 (Apsley)—Hwy. 28	0.3	1,514.00	371.04	1,885.04
621	Hwy. 11—Lake of the Woods	32.8	15,041.56	32,341.98	47,383.54
622	Hwy. 11 (Atikokan) Northerly	6.8	338.18	30,077.69	30,415.87
623	Hwy. 11—Sapawe	3.1	59,829.48	5,613.31	65,442.79
624	Hwy. 11—Larder Lake	26.3	270,851.14	55,276.74	326,127.88
625	Hwy. 11—Caramat	20.0	7,641.13	40,556.52	48,197.65

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
626	Matheson-Porquois Junction	19.8	\$ 6,059.02	\$ 27,883.44	\$ 33,942.46
627	Hwy. 17-Heron Bay	5.2	—	8,693.60	8,693.60
628	Jct. Hwys. 11 & 17-Red Rock	4.4	343,204.29	7,580.69	350,784.98
629	Hwy. 101-Timmins Airport	6.7	4,449.49	25,153.65	29,603.14
630	Hwy. 17-Kiosk	18.1	149,048.02	45,544.93	194,592.95
631	Hornepayne-Hwy. 11	46.6	980,227.93	138,735.48	1,118,963.41
632	Hwy. 118-Rosseau	16.0	490,317.44	54,461.09	544,778.53
633	Hwy. 11-Kawene	3.7	—	3,756.26	3,756.26
634	Hwy. 69-Hwy. 144	11.8	506,897.11	31,450.57	538,347.68
635	Rolphton-Ottawa River	1.6	—	4,324.92	4,324.92
636	Hwy. 11-Frederickhouse Stn.	3.0	8.28	16,081.10	16,089.38
637	Hwy. 69-Killarney	41.8	60,648.77	135,996.14	196,644.91
638	Hwy. 17-Dunns Valley	23.9	48,184.62	77,649.71	125,834.33
639	Hwy. 108-Hwy. 129	14.3	19,548.34	8,318.55	27,866.89
640	Hwy. 571-Earlton Airport Entrance	1.7	—	4,384.90	4,384.90
641	Hwy. 17-Hwy. 596	8.4	—	17,857.96	17,857.96
642	Sioux Lookout-Alcona	11.3	18,285.27	17,622.14	35,907.41
643	Nakina-Cavell	12.1	—	10,678.23	10,678.23
644	Hwy. 69 (Pointe au Baril)	0.6	—	1,932.73	1,932.73
645	Hwy. 529-Byng Inlet	2.5	—	8,353.64	8,353.64
646	Central Patricia-Pickle Lake	4.5	161.62	8,320.22	8,481.84
647	Vermilion Bay-Blue Lake Provincial Park	5.5	6,392.54	9,137.27	15,529.81
648	Hwy. 121-Dyno Mine	23.5	4,512.72	43,739.92	48,252.64
649	Hwy. 36 (Bobcaygeon)-Union Creek	10.9	3,494.28	24,559.93	28,054.21
650	Hwy. 112 (Dane)-Adams Mine	4.7	204,367.23	12,958.50	217,325.73
651	Hwy. 101-Renabie	—	583,557.39	1,083.80	584,641.19
652	Hwy. 574 Easterly	—	39,748.76	10,945.83	50,694.59
653	Hwy. 17 (Haley Stn.)-Chenau Power Development	5.5	149,255.39	16,469.83	165,725.22
654	Callander-Nipissing	14.2	12,969.94	43,988.88	56,958.82
655	Hwy. 101-Texas Gulf Sulfur Mine	13.4	12,470.44	15,187.66	27,658.10
656	Hwy. 533 (N. of Mattawa) Northerly	2.6	7,527.79	1,608.41	9,136.20
657	Hwy. 105-Goldpines	2.7	—	1,248.76	1,248.76
658	Hwy. 17-Fairbank Provincial Park	12.2	7,122.75	32,539.77	39,662.52
659	Kenora East Limits-Hwy. 128	12.3	7,219.78	10,049.25	17,269.03
660	Bala-Hwy. 103	11.4	7,895.32	30,859.55	38,754.87
TOTAL EXPENDITURE ALLOCATED TO SECONDARY HIGHWAYS			\$12,021,063.63	\$7,207,381.68	\$19,228,445.31

## TERTIARY ROADS

800	Hwy. 11 & 17 (Port Arthur N. Limits) -North of Whistle Lake	63.5	\$ 1,248.00	\$ 26,923.41	\$ 28,171.41
801	Hwy. 11-Namewanimikan River	8.8	261.35	2,640.45	2,901.80
802	Hwy. 11-Burchell Lake	8.5	—	16,291.42	16,291.42
804	Hwy. 105-Lower Manitou Falls	12.8	2,156.30	24,818.99	26,975.29
805	Hwy. 539A (River Valley)-Pond Lake	35.0	4,154.02	15,785.18	19,939.20
806	Hwy. 545-Moose Mt. Mine	42.0	—	1,571.26	1,571.26
807	Hwy. 11 (Smooth Rock Falls)- Fraserdale	44.5	47,244.48	34,137.92	81,382.40
808	Central Patricia North Westerly	36.0	12.42	2,348.44	2,360.86
TOTAL EXPENDITURE ALLOCATED TO TERTIARY ROADS			\$ 55,076.57	\$ 124,517.07	\$ 179,593.64

LOCATION	CONSTRUCTION	MAINTENANCE	TOTAL
ACCESS AND INDUSTRIAL ROADS			
Armstrong Road from Hwy. 17 Northerly.....	\$ 2,407.20CR	\$ —	\$ 2,407.20CR
Old Garden River Road.....	24,124.05	—	24,124.05
Point Deschenes Road.....	32,400.06	—	32,400.06
Sandbanks Provincial Park Road.....	2,806.91	—	2,806.91
Ste. Marie Among The Hurons (2 mi. E. of Midland).....	16,132.47CR	—	16,132.47CR
E. A. Wicks Road.....	2,435.44	5,065.34	7,500.78
Algom-Nordic Mine Road.....	—	5,823.80	5,823.80
Caramat - Manitouwadge.....	—	37,247.48	37,247.48
Denison Mine Road.....	—	6,978.14	6,978.14
Milliken Mine Road.....	—	5,521.65	5,521.65
Panel Mine Road.....	—	4,453.34	4,453.34
Stanrock Mine Road.....	—	8,639.96	8,639.96
TOTAL EXPENDITURE ALLOCATED TO ACCESS AND INDUSTRIAL ROADS	\$ 43,226.79	\$ 73,729.71	\$ 116,956.50
OTHER PROGRAMS:			
Beach Boulevard (Burlington).....	\$ 122.21CR	—	\$ 122.21CR
Carleton Street Tunnel (St. Catharines).....	272,810.35	—	272,810.35
Dixon Road (Metro Toronto).....	894.91	—	894.91
E. C. Row Boulevard (Windsor).....	35,155.20	—	35,155.20
International Airport Road (Metro Toronto)....	14,672.78	40,332.01	55,004.79
Macdonald-Cartier Bridge (Ottawa).....	67,903.39CR	—	67,903.39CR
Moose Creek Bridge (Township of Casey).....	1,968.92	—	1,968.92
Ottawa Queensway (Ottawa).....	2,843,300.62	2,561.12	2,845,861.74
Perley Bridge (Hawkesbury).....	—	5,529.52	5,529.52
Belfield Expressway.....	4,598.84	—	4,598.84
Rainbow Bridge Plaza (Niagara Falls).....	726,089.99	—	726,089.99
The Queensway (Metro Toronto).....	75.00CR	—	75.00CR
Yonge Street (Metro Toronto).....	906.40	—	906.40
Connecting Links.....	12,238,071.20	455,937.35	12,694,008.55
Development Roads.....	17,980,788.70	353,382.35	18,334,171.05
Ferries.....	86,671.00	757,857.90	844,528.90
Lands and Buildings.....	2,047,601.92	398,533.23	2,446,135.15
Miscellaneous Surveys.....	107,752.74	—	107,752.74
Sidewalks.....	82,966.35	—	82,966.35
Weigh Scales.....	274,135.99	30,628.10	304,764.09
TOTAL EXPENDITURE ALLOCATED TO OTHER PROGRAMS	\$ 36,650,285.31	\$ 2,044,761.58	\$ 38,695,046.89
UNINCORPORATED TOWNSHIP ROADS:			
Statute Labour Board.....	\$ 235,608.88	\$ 512,141.86	\$ 747,750.74
Local Road Board.....	139,106.74	403,803.04	542,909.78
Settlers (Special).....	170,070.15	53,797.41	223,867.56
Indian Reserves.....	—	29,251.53	29,251.53
TOTAL EXPENDITURE ALLOCATED TO UNINCORPORATED TOWNSHIP ROADS	\$ 544,785.77	\$ 998,993.84	\$ 1,543,779.61
HIGHWAY TOTALS.....	\$185,115,551.22	\$47,740,333.23	\$232,855,884.45
Sundry unallocated, District Office, Administrative, Engineering, Building, Inventory Charges, etc.	\$ 3,814,250.85	\$10,648,759.47	\$ 14,463,010.32
TOTAL EXPENDITURE.....	\$188,929,802.07	\$58,389,092.70	\$247,318,894.77

[ ] Indicates that two highways share the same route: the mileage is shown against the bracketed highway.



# APPENDIX No. 4 Counties

## Chronological Summary of Road Expenditure and Provincial Subsidy

YEAR	NUMBER OF COUNTIES	APPROVED EXPENDITURE	GOVERNMENT
1903	4	\$ 166,149.06	\$ 55,383.02
1904	7	291,085.42	97,028.48
1905	6	179,593.62	59,864.53
1906	8	247,102.37	82,367.45
1907	14	383,518.86	127,839.62
1908	15	429,393.57	143,131.16
1909	16	440,374.08	146,791.36
1910	17	553,312.61	184,437.54
1911	19	712,072.52	237,357.50
1912	20	898,631.18	299,543.69
1913	20	847,684.15	282,561.35
1914	20	785,521.93	261,840.61
1915	20	811,540.05	270,513.34
1916	21	955,447.19	327,663.76
1917	30	1,388,341.87	483,621.32
1918	36	2,226,899.70	815,440.01
1919	37	5,714,937.19	2,623,719.24
1920	37	7,956,863.72	3,626,418.08
1921	37	11,078,288.39	5,119,882.26
1922	37	9,162,491.79	4,258,339.83
1923	37	7,403,509.96	3,418,523.07
1924	37	6,861,451.62	3,214,321.50
1925	37	6,608,431.04	3,222,678.10
1926	37	5,838,445.12	2,913,660.96
1927	37	7,424,464.85	3,706,719.88
1928	37	8,784,420.42	4,360,222.86
1929	37	9,212,758.04	4,591,110.16
1930	37	8,929,424.27	4,463,527.11
1931	37	7,265,350.65	3,625,860.66
1932	37	4,214,410.70	2,106,457.18
1933	37	3,058,622.91	1,529,228.37
1934	37	3,391,768.96	1,695,291.35
1935	37	3,107,215.32	1,553,273.39
1936	37	3,438,188.53	1,718,944.63
1937	37	4,062,753.39	2,031,372.49
1938	37	4,686,333.38	2,342,971.65
1939	37	4,775,109.01	2,387,240.73
1940	37	4,496,702.25	2,247,977.06
1941	37	4,805,301.60	2,402,650.75
1942	37	3,221,505.02	1,610,752.54
1943	37	3,951,745.47	1,975,872.73
1944	37	4,675,028.89	2,365,507.20
1945	37	5,692,079.85	2,898,135.97
1946	37	7,392,946.45	3,769,755.43
1947	37	9,597,750.67	5,064,601.24
1948	37	11,345,808.93	6,176,598.43
1949	37	12,645,251.23	6,949,735.96
1950	37	12,863,429.71	6,923,703.44
1951	37	15,136,060.35	8,058,376.21
1952	37	17,373,344.83	9,276,797.84
1953	37	16,404,875.09	8,822,596.50
1954	37	17,221,063.01	9,393,936.07
1955	37	19,193,907.77	10,304,707.49
1956	37	22,632,299.59	12,042,792.32
1957	37	25,310,514.10	13,832,163.98
1958	37	27,044,966.20	14,603,895.24
1959	37	31,478,080.94	17,094,520.86
1960	37	32,090,731.87	17,613,395.23
1961	37	31,210,823.16	17,179,416.16
1962	37	35,033,598.28	19,025,879.89
1963	37	36,470,286.63	19,784,038.11
1964	37	37,118,003.14	20,361,773.04
1965	37	42,002,954.92	23,261,397.01
1966	37	45,404,138.17	24,663,011.28
TOTALS TO DATE	.....	\$676,105,105.56	\$356,089,136.22

APPENDIX No. 5

County Road Mileages and Expenditures

From Inception of County Road Systems to December 31st, 1966

Provincial Subsidies on 1966 Expenditures Being Paid in the 1966-67 Fiscal Year

COUNTY	YEAR OF ESTABLISH- MENT OF SYSTEM	ROAD MILEAGES			TOTAL APPROVED EXPENDITURES TO END OF 1966	TOTAL GOVERNMENT GRANT
		COUNTY ROADS	COUNTY SUB- URBAN	TOTAL		
Brant.....	1917	86.0	43.9	129.9	\$ 10,739,301.78	\$ 5,763,029.72
Bruce.....	1917	295.9	—	295.9	16,072,266.38	8,620,793.20
Carleton.....	1910	240.9	140.6	381.5	31,183,480.75	16,283,961.09
Dufferin.....	1918	150.4	—	150.4	7,373,060.91	3,815,327.24
Elgin.....	1917	270.3	22.1	292.4	16,124,439.16	8,573,925.21
Essex.....	1916	154.0	117.0	271.0	26,597,647.09	13,864,000.69
Frontenac.....	1907	139.5	21.1	160.6	8,990,890.37	4,702,152.82
Grey.....	1918	337.9	24.7	362.6	18,107,809.64	9,410,947.18
Haldimand.....	1912	184.3	—	184.3	15,236,954.06	8,201,694.63
Halton.....	1907	158.1	—	158.1	12,861,944.71	6,607,448.52
Hastings.....	1904	206.2	16.2	222.4	11,698,660.38	5,990,271.68
Huron.....	1917	338.7	—	338.7	18,713,489.77	10,171,023.45
Kent.....	1917	379.0	31.5	410.5	26,605,762.63	14,715,244.61
Lambton.....	1918	218.4	25.5	243.9	23,245,826.67	12,737,046.67
LaHark.....	1903	217.3	11.0	228.3	10,158,968.67	5,285,434.44
Leeds and Grenville.....	1910	307.1	33.1	340.2	14,461,965.97	7,300,293.74
Lennox and Addington.....	1906	163.4	—	163.4	9,153,179.89	4,745,509.94
Lincoln.....	1904	121.8	47.3	169.1	16,345,847.57	8,347,783.74
Middlesex.....	1906	321.2	67.6	388.8	32,754,574.59	17,881,025.49
Norfolk.....	1917	244.0	—	244.0	18,668,472.74	9,689,137.91
Northumberland and Durham	1918	295.3	12.7	308.0	18,062,399.63	9,516,483.51
Ontario.....	1918	221.8	37.9	259.7	18,806,590.50	10,040,346.88
Oxford.....	1904	212.4	16.7	229.1	17,950,566.04	9,484,140.23
Peel.....	1907	176.9	—	176.9	25,240,131.80	13,522,124.79
Perth.....	1907	180.7	29.5	210.2	11,441,305.10	5,958,358.37
Peterborough.....	1919	147.5	38.7	186.2	9,638,189.70	5,270,173.35
Prescott and Russell.....	1917	299.9	—	299.9	17,848,366.81	9,370,499.71
Prince Edward.....	1907	193.6	—	193.6	8,787,416.47	4,450,612.57
Renfrew.....	1918	216.8	—	216.8	14,020,875.65	7,352,592.86
Simcoe.....	1903	320.1	20.1	340.2	20,028,596.83	10,300,493.99
Stormont, Dundas, Glengarry	1917	341.4	61.0	402.4	19,924,893.75	10,421,189.69
Victoria.....	1917	233.7	—	233.7	10,961,282.93	5,793,377.82
Waterloo.....	1908	111.1	117.0	228.1	20,997,500.17	11,320,345.51
Welland.....	1912	104.5	51.4	155.9	22,471,104.78	11,602,371.47
Wellington.....	1903	266.3	37.9	304.2	21,703,952.05	11,509,354.17
Wentworth.....	1903	1.6	169.8	171.4	19,436,420.40	9,808,172.19
York.....	1911	8.1	195.5	203.6	53,690,969.22	27,662,447.14
TOTALS.....		7866.1	1389.8	9255.9	\$676,105,105.56	\$356,089,136.22

# APPENDIX

## Summary of County (Government Subsidies Paid)

	ROADS		BRIDGES AND CULVERTS	
	CONSTRUCTION	MAINTENANCE	CONSTRUCTION	MAINTENANCE
Brant.....	\$ 431,116.90	\$ 174,213.02	\$ 38,195.54	\$ 4,374.30
Bruce.....	548,898.88	240,591.82	121,993.63	2,122.30
Carleton.....	639,012.38	213,574.20	26,064.05	13,737.59
Carleton (Ottawa Sub.).....	1,041,502.07	140,180.19	17,793.88	9,226.51
Dufferin.....	106,199.24	205,487.08	97,104.61	2,377.06
Elgin.....	621,462.63	287,678.20	345,970.92	21,617.42
Essex.....	694,186.32	411,244.59	134,761.49	10,874.52
Frontenac.....	527,124.36	182,140.82	250,954.35	2,013.78
Grey.....	760,424.42	396,415.55	200,374.07	3,549.07
Haldimand.....	561,515.91	31,629.70	240,703.04	176.79
Halton.....	507,624.64	235,491.58	125,261.01	3,697.43
Hastings.....	303,292.31	257,334.48	92,516.06	5,309.58
Huron.....	475,382.64	494,688.37	245,423.52	4,444.86
Kent.....	775,437.60	380,863.64	136,207.14	17,444.22
Lambton.....	1,537,845.09	349,750.72	398,465.57	40,294.58
Lanark.....	346,932.93	203,362.01	108,418.91	2,571.06
Leeds and Grenville.....	477,958.74	381,978.28	14,745.67	6,338.97
Lennox and Addington.....	287,134.47	158,985.01	47,472.88	219.70
Lincoln.....	396,097.65	289,359.67	225,351.11	12,199.20
Middlesex.....	1,036,567.10	367,080.22	281,388.31	31,323.77
Norfolk.....	838,836.80	432,206.87	207,702.56	11,416.80
Northumberland and Durham.....	1,016,120.72	314,475.30	423,300.64	3,466.66
Ontario.....	1,198,334.09	307,608.44	332,694.56	13,451.89
Oxford.....	564,072.57	339,711.16	274,654.63	12,889.74
Peel.....	731,464.31	359,551.20	224,415.16	9,635.11
Perth.....	340,021.16	221,563.32	72,834.41	8,299.34
Peterborough.....	266,388.29	183,740.80	92,733.70	845.78
Prescott and Russell.....	359,044.28	273,618.01	313,459.86	8,516.06
Prince Edward.....	223,960.69	173,969.44	61,910.02	462.82
Renfrew.....	385,995.95	161,684.30	194,486.45	5,927.68
Simcoe.....	968,676.61	435,741.75	155,635.65	4,852.54
Stormont, Dundas and Glengarry.....	522,922.71	406,404.19	174,758.82	20,175.51
Victoria.....	358,087.47	317,763.02	56,204.76	11,653.89
Waterloo.....	538,995.31	385,048.77	220,235.01	20,031.99
Welland.....	519,028.43	366,297.67	70,930.20	54.02
Wellington.....	464,366.45	633,999.80	99,235.59	5,709.42
Wentworth.....	711,585.83	244,266.87	5,648.05 CR	5,893.93
York.....	2,466,450.73	391,359.38	78,185.83	2,382.40
TOTAL.....	\$24,550,068.68	\$11,351,059.44	\$6,196,895.56	\$ 339,578.29

## Summary of Metropolitan

Metro. Toronto Roads (50%).....	\$28,751,616.18	\$ 3,184,894.32	\$3,583,206.52	\$ 244,493.81
Metro. Toronto Subway (33 1/3%).....	17,506,084.24	—	—	—

## No. 6

Road Expenditures  
in 1966-67 Fiscal Year)

WINTER CONTROL (MAINTENANCE)	CONSTRUCTION	APPROVED EXPENDITURE MAINTENANCE	TOTAL	GOVERNMENT SUBSIDY 50% AND 80%
\$ 44,175.52	\$ 469,312.44	\$ 222,762.84	\$ 692,075.28	\$ 358,868.59
99,836.82	670,892.51	342,550.94	1,013,443.45	543,956.51
44,398.16	665,076.43	271,709.95	936,786.38	480,333.68
91,379.40	1,059,295.95	240,786.10	1,300,082.05	658,147.14
	1,034,371			
38,829.35	203,303.85	246,693.49	449,997.34	254,843.17
50,517.88	967,433.55	359,813.50	1,327,247.05	773,900.03
39,190.00	828,947.81	461,309.11	1,290,256.92	688,819.26
42,321.72	778,078.71	226,476.32	1,004,555.03	578,167.56
106,223.38	960,798.49	506,188.00	1,466,986.49	794,670.19
13,851.97	802,218.95	45,658.46	847,877.41	496,202.66
77,253.80	632,885.65	316,442.81	949,328.46	513,351.76
59,505.38	395,808.37	322,149.44	717,957.81	388,326.59
99,736.26	720,806.16	598,869.49	1,319,675.65	734,798.34
27,095.02	911,644.74	425,402.88	1,337,047.62	714,619.22
31,572.07	1,936,310.66	421,617.37	2,357,928.03	1,310,592.16
50,543.56	455,351.84	256,476.63	711,828.47	389,211.23
54,298.93	492,704.41	442,616.18	935,320.59	473,985.69
37,483.95	334,607.35	196,688.66	531,296.01	279,955.77
125,981.56	621,448.76	427,540.43	1,048,989.19	595,759.68
69,717.37	1,317,955.41	468,121.36	1,786,076.77	986,852.01
36,355.21	1,046,539.36	479,978.88	1,526,518.24	828,994.93
119,190.85	1,439,421.36	437,132.81	1,876,554.17	1,066,367.28
141,828.13	1,531,028.65	462,888.46	1,993,917.11	1,100,802.49
51,149.93	838,727.20	403,750.83	1,242,478.03	707,502.33
160,199.13	955,879.47	529,385.44	1,485,264.91	812,847.53
28,648.36	412,855.57	258,511.02	671,366.59	360,023.43
36,878.95	359,121.99	221,465.53	580,587.52	318,367.60
51,789.98	672,504.14	333,924.05	1,006,428.19	599,806.88
37,338.87	285,870.71	211,771.13	497,641.84	267,532.77
64,929.46	580,482.40	232,541.44	813,023.84	466,636.16
155,130.00	1,124,312.26	595,724.29	1,720,036.55	908,164.74
59,575.56	697,681.53	486,155.26	1,183,836.79	650,398.69
86,550.78	414,292.23	415,967.69	830,259.92	435,487.56
78,600.41	759,230.32	483,681.17	1,242,911.49	693,535.85
130,917.66	589,958.63	497,269.35	1,087,227.98	564,909.26
88,430.51	563,602.04	728,139.73	1,291,741.77	677,354.39
152,532.77	705,937.78	402,693.57	1,108,631.35	554,389.44
282,577.54	2,544,636.56	676,319.32	3,220,955.88	1,634,648.41
\$2,966,536.20	\$30,746,964.24	\$14,657,173.93	\$45,404,138.17	\$24,663,011.28

## Road Expenditures — 1966

\$2,567,745.31	\$32,334,822.70	\$ 5,997,133.44	\$38,331,956.14	\$19,165,978.67
—	17,506,084.24	—	17,506,084.24	5,835,361.41



## APPENDIX No. 7

## Incorporated Townships—Chronological Summary of Road Expenditure and Provincial Subsidy Including Improvement Districts and Indian Reserves

YEAR	NO. OF TOWNSHIPS	APPROVED EXPENDITURE	SUBSIDY
1920 to 1934	172-352	\$ 58,408,281.44	\$ 18,749,941.38
1935	353	2,945,424.37	1,233,806.48
1936	357	2,988,617.38	1,251,632.43
1937	358	3,857,518.61	1,943,344.98
1938	574	4,826,905.00	2,553,837.97
1939	583	5,392,981.59	2,865,752.12
1940	584	4,505,295.63	2,411,064.90
1941	584	5,452,286.74	2,917,816.44
1942	583	3,698,301.35	1,978,368.31
1943	584	5,512,990.52	2,929,508.15
1944	585	6,263,799.90	3,400,704.29
1945	596	7,696,533.87	4,177,608.83
1946	602	9,366,654.59	5,131,432.11
1947	604	12,562,798.76	7,064,222.50
1948	606	13,688,529.08	7,763,289.85
1949	609	15,262,451.16	8,658,125.77
1950	610	15,852,838.23	8,944,246.08
1951	610	18,774,705.27	10,544,324.37
1952	614	21,261,356.88	11,966,206.37
1953	615	20,448,782.51	11,477,684.36
1954	617	23,346,392.74	13,185,561.47
1955	619	27,026,146.81	15,376,232.29
1956	623	30,080,387.33	16,908,428.56
1957	624	33,147,636.96	18,530,211.67
1958	627	35,683,958.31	19,867,541.32
1959	626	41,789,335.40	23,376,726.39
1960	625	45,098,684.79	25,150,102.14
1961	632	44,505,542.38	24,919,087.33
1962	633	46,022,546.96	26,082,619.19
1963	634	51,317,254.17	29,923,461.38
1964	633	53,234,002.84	31,228,752.16
1965	633	57,009,416.46	33,473,942.31
1966	635	66,814,210.22	39,371,537.52
TOTALS.....		\$793,842,568.25	\$435,357,121.42

## APPENDIX No. 8

## Cities, Towns and Villages

## Chronological Summary of Road Expenditures and Provincial Subsidy

YEAR	NO. OF URBAN MUNICIPALITIES	APPROVED EXPENDITURE	SUBSIDY
1947	324	\$ 5,334,316.72	\$ 2,667,158.49
1948	327	5,614,300.68	2,807,150.46
1949	330	12,194,258.56	4,550,703.10
1950	331	12,834,506.55	4,823,922.36
1951	334	15,956,137.03	5,931,088.54
1952	333	15,898,102.64	5,946,052.04
1953	335	17,598,631.85	6,890,106.26
1954	336	18,223,848.41	7,021,797.64
1955	338	21,703,070.95	8,560,475.48
1956	339	24,456,353.43	9,612,156.92
1957	339	25,546,531.26	10,188,038.48
1958	340	30,231,140.62	11,723,534.51
1959	340	32,890,747.85	12,774,059.54
1960	341	36,899,762.02	14,506,072.66
1961	341	37,130,872.81	14,862,154.63
1962	345	40,193,137.14	15,903,508.14
1963	346	44,397,369.60	17,580,312.26
1964	346	51,665,358.26	20,535,895.02
1965	348	60,819,523.20	24,298,707.63
1966	346	71,813,234.49	28,350,638.52
TOTALS.....		\$581,401,204.07	\$229,533,532.68

APPENDIX No. 9

Mileage of Urban Road Surfaces at the End of 1966  
Roads Under Local Authority

COUNTIES	LEGALLY OPEN	EARTH GRADED AND DRAINED	GRAVEL OR STONE	LIGHT BITUMI- NOUS	ASPHALT CON- CRETE	CEMENT CON- CRETE	OTHER	TOTAL
Brant.....	—	—	40.0	84.3	54.7	20.4	—	199.4
Bruce.....	6.7	4.4	50.8	58.3	28.8	—	—	149.0
Carleton.....	3.6	11.6	36.5	186.2	314.3	6.9	—	559.1
Dufferin.....	1.2	1.2	10.1	0.5	20.4	1.7	—	35.1
Elgin.....	13.5	1.2	22.1	52.2	40.2	1.1	1.1	131.4
Essex.....	14.1	24.4	90.1	90.7	190.6	292.3	3.4	705.6
Frontenac.....	0.3	0.8	—	16.4	84.8	0.3	—	102.6
Grey.....	0.5	28.8	35.6	70.4	25.7	2.3	—	163.3
Haldimand.....	13.6	3.7	22.8	22.4	17.4	1.3	—	81.2
Halton.....	31.4	8.8	189.0	232.1	155.6	10.5	—	627.4
Hastings.....	0.5	3.3	24.8	73.6	43.1	0.2	—	145.5
Huron.....	2.7	0.9	49.0	38.7	28.2	—	—	119.5
Kent.....	8.0	6.1	53.4	11.6	138.0	9.7	—	226.8
Lambton.....	13.6	4.5	65.5	73.9	79.0	6.3	—	242.8
Lanark.....	26.3	0.3	30.7	30.3	25.2	0.7	—	113.5
Leeds and Grenville.....	2.0	0.8	15.8	34.2	63.6	4.5	—	120.9
Lennox and Addington.....	0.2	—	5.6	11.2	5.8	—	—	22.8
Lincoln.....	2.4	7.9	33.6	201.2	84.8	57.6	—	387.5
Middlesex.....	13.7	2.0	102.3	223.8	180.8	1.7	—	524.3
Norfolk.....	4.8	2.4	17.2	38.3	21.8	0.1	—	84.6
Northumberland and Durham.....	5.2	1.3	58.6	72.7	65.1	4.6	—	207.5
Ontario.....	19.0	0.2	62.3	100.5	153.1	—	—	335.1
Oxford.....	8.7	1.1	41.7	69.8	40.2	2.7	0.4	164.6
Peel.....	0.9	1.4	19.4	28.0	61.5	—	—	111.2
Perth.....	9.3	1.3	56.1	50.5	46.8	0.7	—	164.7
Peterborough.....	8.4	0.1	34.3	82.0	59.0	6.0	—	189.8
Prescott and Russell.....	6.5	3.8	10.4	15.6	28.3	—	—	64.6
Prince Edward.....	—	0.1	1.0	7.2	14.1	0.9	—	23.3
Renfrew.....	1.6	4.7	48.9	43.7	69.8	—	—	168.7
Simcoe.....	18.8	17.4	96.3	131.6	120.2	6.7	—	391.0
Stormont, Dundas and Glengarry.....	2.6	—	35.5	43.8	18.5	47.5	—	147.9
Victoria.....	15.4	2.3	45.5	3.6	26.4	—	—	93.2
Waterloo.....	23.6	9.8	38.5	200.2	189.6	42.9	—	504.6
Welland.....	12.4	8.9	150.2	164.8	151.3	7.1	—	494.7
Wellington.....	13.9	4.6	62.7	103.5	96.9	3.6	—	285.2
Wentworth.....	6.5	0.2	18.5	150.5	380.0	1.6	—	557.3
York.....	0.3	2.2	16.6	51.7	66.4	—	—	137.2
TOTAL COUNTIES.....	312.2	172.5	1,691.4	2,870.0	3,190.0	541.9	4.9	8,782.9
Metro Toronto Area.....	3.0	—	6.7	7.3	576.0	5.5	2.3	600.8
DISTRICTS								
Algoma.....	37.0	12.9	151.8	15.5	139.0	4.3	0.1	360.6
Cochrane.....	33.3	7.7	67.2	23.9	50.0	—	—	182.1
Haliburton.....	—	—	—	—	—	—	—	—
Kenora.....	—	—	55.3	10.9	37.4	0.1	—	103.7
Manitoulin.....	3.3	2.8	11.8	1.5	0.5	—	—	19.9
Muskoka.....	23.9	0.4	39.0	24.8	6.3	—	—	94.4
Nipissing.....	8.1	—	34.3	6.9	40.0	—	—	89.3
Parry Sound.....	29.3	0.2	34.1	1.8	14.9	—	—	80.3
Rainy River.....	—	1.0	37.2	10.1	14.1	0.2	0.4	63.0
Sudbury.....	15.9	3.2	67.7	85.4	124.8	0.4	—	297.4
Timiskaming.....	—	—	31.2	2.2	25.4	—	—	58.8
Thunder Bay.....	—	—	96.7	49.2	120.2	2.2	—	268.3
TOTAL DISTRICTS.....	150.8	28.2	626.3	232.2	572.6	7.2	0.5	1,617.8
GRAND TOTAL.....	466.0	200.7	2,324.4	3,109.5	4,338.6	554.6	7.7	11,001.5

## APPENDIX

## Mileage of Rural Road Surfaces

## COUNTY ROADS

COUNTY	LEGALLY OPEN	EARTH GRADED AND DRAINED	GRAVEL OR STONE	LIGHT BITUMI- NOUS SURFACE	ASPHALT CON- CRETE	CEMENT CON- CRETE	OTHER
Brant.....	—	—	24.5	99.7	5.7	—	—
Bruce.....	—	—	97.6	97.1	101.2	—	—
Carleton.....	—	—	42.6	31.8	235.1	—	—
Dufferin.....	—	—	108.3	2.9	39.2	—	—
Elgin.....	—	0.6	97.6	172.5	21.7	—	—
Essex.....	—	—	107.6	59.6	89.7	2.7	11.4
Frontenac.....	—	—	32.0	106.4	22.2	—	—
Grey.....	—	—	254.2	83.0	24.8	0.6	—
Haldimand.....	3.5	—	14.6	161.5	4.7	—	—
Halton.....	—	—	34.1	75.1	48.9	—	—
Hastings.....	—	—	146.7	67.4	6.2	2.1	—
Huron.....	—	—	164.4	102.1	72.2	—	—
Kent.....	—	0.6	32.4	21.6	348.0	7.9	—
Lambton.....	—	—	59.7	87.9	82.8	0.1	13.4
Lanark.....	—	—	120.3	108.0	11.0	—	—
Leeds and Grenville.....	—	—	140.5	193.4	5.1	1.2	—
Lennox and Addington.....	—	—	—	114.8	48.6	—	—
Lincoln.....	0.9	—	7.4	127.0	32.7	1.1	—
Middlesex.....	0.3	—	66.8	121.8	187.0	12.9	—
Norfolk.....	1.4	3.4	28.3	206.5	2.8	1.6	—
Northumberland and Durham.....	—	—	55.0	176.5	76.5	—	—
Ontario.....	—	—	53.8	83.0	120.1	2.8	—
Oxford.....	—	—	63.9	100.8	52.9	11.5	—
Peel.....	—	—	16.0	71.2	88.8	0.9	—
Perth.....	—	—	52.3	91.7	66.2	—	—
Peterborough.....	—	—	98.3	45.6	42.3	—	—
Prescott and Russell.....	—	—	98.3	122.7	78.9	—	—
Prince Edward.....	—	—	40.9	116.4	36.3	—	—
Renfrew.....	—	—	23.7	13.8	179.3	—	—
Simcoe.....	—	—	140.4	57.4	142.4	—	—
Stormont, Dundas, Glengarry.....	—	—	107.8	246.3	108.7	0.6	—
Victoria.....	—	—	113.9	83.3	36.5	—	—
Waterloo.....	—	—	24.2	120.5	79.7	3.7	—
Welland.....	2.5	—	8.7	114.6	30.1	—	—
Wellington.....	—	—	128.3	102.1	73.8	—	—
Wentworth.....	—	—	—	170.5	0.9	—	—
York.....	—	—	19.0	10.3	174.3	—	—
<b>TOTAL—COUNTIES.....</b>	<b>8.6</b>	<b>4.6</b>	<b>2,624.1</b>	<b>3,766.8</b>	<b>2,777.3</b>	<b>49.7</b>	<b>24.8</b>
<b>Metropolitan</b>							
Metropolitan Toronto Area.....	4.0	—	1.8	5.8	350.6	8.3	—
<b>DISTRICTS</b>							
Algoma.....	—	—	—	—	—	—	—
Cochrane.....	—	—	—	—	—	—	—
Haliburton.....	—	—	—	—	—	—	—
Kenora.....	—	—	—	—	—	—	—
Manitoulin.....	—	—	—	—	—	—	—
Muskoka.....	—	—	—	—	—	—	—
Nipissing.....	—	—	—	—	—	—	—
Parry Sound.....	—	—	—	—	—	—	—
Rainy River.....	—	—	—	—	—	—	—
Sudbury.....	—	—	—	—	—	—	—
Timiskaming.....	—	—	—	—	—	—	—
Thunder Bay.....	—	—	—	—	—	—	—
<b>TOTAL—DISTRICTS.....</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
Unorganized Townships.....	—	—	—	—	—	—	—
<b>GRAND TOTALS.....</b>	<b>12.6</b>	<b>4.6</b>	<b>2,625.9</b>	<b>3,772.6</b>	<b>3,127.9</b>	<b>58.0</b>	<b>24.8</b>

No. 10  
at the End of 1966

INCORPORATED—TOWNSHIP ROADS

TOTAL	LEGALLY OPEN	EARTH GRADED AND DRAINED	GRAVEL OR STONE	LIGHT BITUMI- NOUS SURFACE	ASPHALT CON- CRETE	CEMENT CON- CRETE	OTHER	TOTAL
129.9	11.8	8.7	429.8	65.0	12.2	—	—	527.5
295.9	77.4	102.8	1,613.7	54.9	9.6	—	—	1,858.4
309.5	42.3	64.1	756.8	108.9	23.4	—	—	995.5
150.4	30.9	28.7	718.5	7.5	0.3	—	—	785.9
292.4	26.2	41.0	790.5	10.9	2.8	0.5	—	871.9
271.0	11.7	19.6	745.9	105.1	16.5	2.2	5.8	906.8
160.6	153.3	69.1	892.6	53.5	19.9	—	—	1,188.4
362.6	138.0	112.0	1,889.5	24.6	6.1	0.5	—	2,170.7
184.3	20.3	44.5	436.3	94.4	8.9	—	—	604.4
158.1	16.4	2.0	210.9	2.2	1.5	—	—	233.0
222.4	254.2	206.3	1,292.2	33.3	10.5	—	—	1,796.5
338.7	25.8	36.1	1,505.3	14.1	19.1	2.0	—	1,602.4
410.5	4.2	19.5	1,158.5	2.2	24.2	1.3	4.0	1,213.9
243.9	17.6	122.4	1,229.0	55.1	11.4	—	14.1	1,449.6
239.3	55.8	88.5	838.6	124.8	—	—	—	1,107.7
340.2	220.8	95.6	948.5	92.8	28.5	0.9	—	1,387.1
163.4	156.1	74.1	544.8	34.9	5.0	—	—	814.9
169.1	90.8	68.7	402.0	86.1	—	1.3	—	648.9
388.8	42.4	23.3	1,558.7	25.3	17.1	0.3	—	1,667.1
244.0	28.2	92.6	501.1	217.0	50.7	—	—	889.6
308.0	479.6	234.6	1,712.8	148.7	31.9	—	—	2,607.6
259.7	155.1	36.1	952.5	64.7	70.7	—	—	1,279.1
229.1	10.8	5.0	966.5	14.3	36.7	—	—	1,033.3
176.9	28.6	20.6	492.9	153.3	149.4	—	—	844.8
210.2	16.2	5.3	1,010.3	3.6	1.6	—	—	1,037.0
186.2	52.4	36.3	877.1	23.6	11.3	—	—	1,000.7
299.9	63.9	233.6	781.0	15.5	—	—	—	1,094.0
193.6	23.6	7.1	329.2	17.6	5.0	1.2	—	383.7
216.8	204.9	324.0	1,361.5	7.3	27.1	—	—	1,924.8
340.2	146.7	48.3	1,905.6	148.1	50.2	—	—	2,298.9
463.4	48.5	109.3	1,093.2	34.3	43.8	—	—	1,329.1
233.7	48.0	38.4	874.7	6.4	0.5	—	—	968.0
228.1	8.1	2.7	515.6	80.3	4.0	1.7	0.6	613.0
155.9	164.5	160.7	409.4	211.1	15.5	0.4	—	961.6
304.2	26.5	68.0	1,052.2	70.3	7.5	0.3	—	1,224.8
171.4	34.7	18.2	433.8	79.3	4.4	—	—	570.4
203.6	63.1	3.6	742.6	44.8	125.6	—	—	979.7
9,255.9	2,999.4	2,671.4	33,974.1	2,335.8	852.9	12.6	24.5	42,870.7

Roads

370.5	79.0	49.2	79.4	446.2	989.1	203.1	—	1,846.0
—	171.6	66.2	531.3	1.3	25.5	—	—	795.9
—	642.9	50.9	480.8	16.9	12.0	—	—	1,203.5
—	30.2	30.7	427.9	72.9	0.6	—	—	562.3
—	1.3	1.5	122.1	1.1	0.3	—	0.7	127.0
—	22.3	50.6	450.7	—	1.5	—	—	525.1
—	181.6	92.3	647.4	160.0	0.4	—	1.8	1,083.5
—	67.6	54.0	466.9	34.7	35.4	—	—	658.6
—	188.2	44.2	821.2	34.6	23.6	—	—	1,111.8
—	25.7	46.4	509.0	1.1	—	—	—	582.2
—	35.8	92.3	440.5	10.0	33.2	0.2	26.2	638.2
—	63.3	34.5	518.8	18.5	33.8	—	—	668.9
—	56.5	22.2	551.2	103.2	62.3	—	—	795.4
—	1,487.0	585.8	5,967.8	454.3	228.6	0.2	28.7	8,752.4
—	565.2	529.8	3,474.3	11.9	3.2	—	—	4,584.4
9,626.4	5,130.6	3,836.2	43,495.6	3,248.2	2,073.8	215.9	53.2	58,053.5



**APPENDIX No. 11**  
**Summary of Expenditures on Urban Streets — 1966**  
**Approved 1966 Expenditures by Cities, Towns and Villages under Part X**  
**of the Highway Improvement Act**

MUNICIPAL ROAD DISTRICT No.	APPROVED EXPENDITURES—1966				GOVERNMENT SUBSIDY 33 $\frac{1}{3}$ %, 50% AND 80%
	CITIES (33) SEP. TOWNS (6)	TOWNS (149)	VILLAGES (158)	URBAN TOTAL (346)	
1	\$ 3,640,483.92	\$ 781,362.46	\$ 318,138.15	\$ 4,739,984.53	\$ 1,859,868.66
2	4,778,558.76	830,340.11	188,479.12	5,797,377.99	2,343,331.32
3	5,293,499.25	1,056,152.18	164,941.51	6,514,592.94	2,417,946.01
4	10,916,792.18	3,491,273.97	319,551.69	14,727,617.84	5,923,271.34
5	644,320.11	1,712,131.92	359,022.76	2,715,474.79	1,280,713.48
6	2,186,715.54	2,150,004.44	286,345.00	4,623,064.98	1,973,935.08
6 MTA	6,747,324.31	991,403.23	245,195.78	7,983,923.32	2,882,063.71
7	663,493.47	1,031,145.97	138,833.28	1,833,472.72	811,453.28
8	1,946,049.83	81,828.19	140,962.71	2,168,840.73	773,932.80
9	11,199,190.40	1,076,160.48	250,817.48	12,526,168.36	4,418,074.69
10	—	—	48,860.12	48,860.12	26,941.35
11	—	220,178.53	49,960.95	270,139.48	137,400.18
13	209,925.32	227,102.55	28,962.06	465,989.93	199,340.82
14	—	610,638.28	2,958.25	613,596.53	307,510.73
16	—	575,475.43	—	575,475.43	288,996.11
17	1,799,370.43	608,866.02	—	2,408,236.45	1,018,294.10
18	1,698,083.84	26,170.45	7,077.55	1,731,331.84	852,478.72
19	1,219,720.43	30,000.00	—	1,249,720.43	421,321.70
20	—	819,366.08	—	819,366.08	413,764.44
TOTALS	\$52,943,527.79	\$16,319,600.29	\$2,550,106.41	\$71,813,234.49	\$28,350,638.52

APPENDIX No. 12

(Contained in Appendix No. 2A)

APPENDIX No. 13

Types of Surface on King's Highway by County or District  
As of March 31, 1967

	CONCRETE	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	TOTAL MILEAGE
Algoma.....	—	335.3	93.7	78.7	507.7
Brant.....	15.5	65.7	6.3	13.1	100.6
Bruce.....	4.8	120.1	20.7	16.9	162.5
Carleton.....	12.7	135.2	—	—	147.9
Cochrane.....	—	316.5	80.5	17.0	414.0
Dufferin.....	0.8	77.6	1.0	—	79.4
Elgin.....	36.0	108.2	—	—	144.2
Essex.....	32.5	154.2	19.7	—	206.4
Frontenac.....	5.0	125.3	47.0	—	177.3
Grey.....	4.7	147.8	—	11.0	163.5
Haldimand.....	—	70.9	2.3	—	73.2
Haliburton.....	—	57.3	59.3	—	116.6
Halton.....	16.7	89.9	—	—	106.6
Hastings.....	4.8	171.1	82.9	—	258.8
Huron.....	—	203.8	—	—	203.8
Kenora.....	—	346.2	43.1	104.1	493.4
Kent.....	52.7	158.4	—	—	211.1
Lambton.....	28.4	160.7	—	—	189.1
Lanark.....	—	114.1	9.4	—	123.5
Leeds and Grenville.....	28.8	198.8	15.8	—	243.4
Lennox and Addington.....	26.5	81.4	43.3	—	151.2
Lincoln.....	10.6	71.3	—	—	81.9
Manitoulin.....	—	19.1	—	35.8	54.9
Middlesex.....	22.2	200.5	—	—	222.7
Muskoka.....	—	150.9	40.5	1.7	193.1
Nipissing.....	9.7	210.8	91.6	50.0	362.1
Norfolk.....	—	92.6	3.3	—	95.9
Northumberland and Durham.....	—	247.1	12.5	6.3	265.9
Ontario.....	—	157.3	9.3	—	166.6
Oxford.....	4.3	140.5	—	—	144.8
Parry Sound.....	—	142.2	40.1	7.9	190.2
Peel.....	11.1	98.6	9.1	—	118.8
Perth.....	—	129.6	—	—	129.6
Peterborough.....	6.1	78.2	27.3	13.2	124.8
Prescott and Russell.....	—	103.8	—	2.0	105.8
Prince Edward.....	—	52.5	4.8	—	57.3
Rainy River.....	—	129.3	35.2	47.0	211.5
Renfrew.....	—	212.3	73.2	11.9	297.4
Simcoe.....	6.9	293.8	6.4	5.0	312.1
Stormont, Dundas and Glengarry.....	43.0	159.8	11.0	—	213.8
Sudbury.....	—	250.0	26.3	158.7	435.0
Thunder Bay.....	—	611.9	20.7	18.1	650.7
Timaskaming.....	—	169.6	91.3	29.3	290.2
Victoria.....	—	106.7	35.5	17.2	159.4
Waterloo.....	10.0	74.8	—	—	84.8
Welland.....	27.6	85.9	0.6	—	114.1
Wellington.....	10.4	155.3	—	12.7	178.4
Wentworth.....	2.1	124.8	24.3	—	151.2
York.....	16.9	166.7	25.8	—	209.4
TOTALS.....	450.8	7,674.4	1,113.8	657.6	9,896.6

## APPENDIX No. 14

Types of Surface on King's Highway by Highway Districts  
As of March 31, 1967

	CONCRETE	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	TOTAL MILEAGE
Chatham.....	113.6	473.3	19.7	—	606.6
London.....	58.2	546.6	3.3	—	608.1
Stratford.....	7.5	623.4	1.0	12.7	644.6
Hamilton.....	82.5	534.1	33.5	13.1	663.2
Owen Sound.....	15.6	532.6	20.7	32.9	601.8
Toronto.....	36.0	439.4	50.6	—	526.0
Port Hope.....	6.1	474.9	55.9	23.5	560.4
Kingston.....	63.5	539.2	106.9	—	709.6
Ottawa.....	58.1	617.8	49.4	9.8	735.1
Bancroft.....	—	117.1	211.9	36.0	365.0
Huntsville.....	—	284.5	105.3	9.6	399.4
North Bay.....	9.7	300.6	73.2	41.8	425.3
New Liskeard.....	—	261.3	170.7	60.2	492.2
Cochrane.....	—	297.9	5.3	15.5	318.7
Sudbury.....	—	294.4	13.7	85.0	393.1
Sault Ste. Marie.....	—	362.3	93.7	148.3	604.3
Fort William.....	—	603.0	20.7	18.1	641.8
Kenora.....	—	372.0	78.3	151.1	601.4
TOTALS.....	450.8	7,674.4	1,113.8	657.6	9,896.6

## APPENDIX No. 15

Types of Surface on Secondary Highways by County or District  
As of March 31, 1967

	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	EARTH	TOTAL MILEAGE
Algoma.....	21.3	44.3	254.3	—	319.9
Cochrane.....	13.7	52.1	128.0	—	193.8
Frontenac.....	—	12.4	24.1	—	36.5
Haliburton.....	6.1	51.3	45.2	—	102.6
Hastings.....	3.1	10.9	26.4	—	40.4
Kenora.....	8.8	8.2	161.9	—	178.9
Lanark.....	—	14.0	—	—	14.0
Lennox and Addington.....	6.2	—	6.5	—	12.7
Manitoulin.....	—	40.4	127.8	—	168.2
Muskoka.....	8.0	64.6	30.9	—	103.5
Nipissing.....	4.3	28.5	62.9	—	95.7
Parry Sound.....	1.4	147.3	97.9	—	246.6
Peterborough.....	0.3	27.4	43.2	—	70.9
Rainy River.....	3.1	10.5	207.1	—	220.7
Renfrew.....	8.8	47.7	79.5	—	136.0
Sudbury.....	34.6	34.8	186.0	—	255.4
Thunder Bay.....	16.4	16.0	467.2	2.4	502.0
Timiskaming.....	11.9	70.3	132.0	—	214.2
Victoria.....	5.1	34.0	26.2	—	65.3
TOTALS.....	153.1	714.7	2,107.1	2.4	2,977.3

APPENDIX No. 16

Types of Surface on Secondary Highways by Highway Districts  
As of March 31, 1967

	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	TOTAL MILEAGE
Owen Sound	—	0.3	8.9	9.2
Port Hope	5.1	52.4	26.6	84.1
Kingston	8.7	6.3	9.3	24.3
Ottawa	—	37.6	14.3	51.9
Bancroft	14.2	91.0	190.3	295.5
Huntsville	9.4	159.7	92.8	261.9
North Bay	7.7	99.0	112.1	218.8
New Liskeard	25.3	119.3	236.2	380.8
Cochrane	0.3	3.1	159.8	163.2
Sudbury	32.8	67.8	303.4	404.0
Sault Ste. Marie	26.5	43.5	173.6	243.6
Fort William	14.3	26.5	447.8	488.6
Kenora	8.8	8.2	334.4	351.4
TOTALS	153.1	714.7	2,109.5	2,977.3

APPENDIX No. 17

Types of Surface on Tertiary Roads by County or District  
As of March 31, 1967

	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	EARTH	TOTAL MILEAGE
Cochrane	—	—	44.0	—	44.0
Kenora	—	—	12.8	—	12.8
Nipissing	—	—	35.0	—	35.0
Sudbury	4.2	—	—	—	4.2
Thunder Bay	—	—	116.8	—	116.8
TOTALS	4.2	—	208.6	—	212.8

APPENDIX No. 18

Types of Surface on Tertiary Roads by Highway Districts  
As of March 31, 1967

	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	TOTAL MILEAGE
North Bay	—	—	35.0	35.0
Cochrane	—	—	44.0	44.0
Sudbury	4.2	—	—	4.2
Fort William	—	—	116.8	116.8
Kenora	—	—	12.8	12.8
TOTALS	4.2	—	208.6	212.8



## APPENDIX No. 19

**Road Mileages in Ontario  
As of March 31, 1967**

	CONCRETE	TYPE OF PAVEMENT		GRAVEL	EARTH	TOTAL
		HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS			
King's Highways.....	450.8	7,674.4	1,113.8	657.6	—	9,896.6
Secondary Highways.....	—	153.1	714.7	2,107.1	2.4	2,977.3
Tertiary Road.....	—	4.2	—	208.6	—	212.8
TOTALS.....	450.8	7,831.7	1,828.5	2,973.3	2.4	13,086.7

## APPENDIX No. 20

**Schedule of Controlled Access Highways  
April 1, 1966 to March 31, 1967**

HIGHWAY	NAME OR LOCATION	DESIGNATED BY ONTARIO REGULATION NUMBER	MILEAGE
3	Tillsonburg By-Pass Township of Middleton and Town of Tillsonburg	397/66	3.00
8	Grimsby Diversion.....	239/66	1.76
20	Highway 20 Diversion City of Niagara Falls.....	397/66	2.50
New 27	Township of Etobicoke and Toronto.....	239/66	4.40
35	Cameron Diversion Township of Fenelon.....	397/66	1.00
37	Plainfield By-Pass Township of Thurlow.....	79/67	1.50
85	Townships of Waterloo and Woolwich and City of Waterloo.....	79/67	3.02
406	Township of Thorold.....	397/66	6.95
416	Southwest Freeway Township of Nepean.....	397/66	0.77
Lakehead			
Expressway	Township of McIntyre.....	97/66	1.00
Lakehead			
Expressway	Township of MacGregor.....	226/66	10.24
Kitchener- Waterloo			
Expressway	Township of Waterloo, City of Waterloo and Kitchener.....	203/66	10.97
Belfield			
Expressway	Townships of Etobicoke and Toronto.....	239/66	2.91
Dundas			
By-Pass	Township of Ancaster, Beverly and West Flamborough.....	79/67	7.19
North Bay			
By-Pass	Township of Widdifield and City of North Bay.....	47/66	1.75
TOTAL MILEAGE.....			58.96

APPENDIX No. 21

Schedule of Designations and Re-Designations of Sections of the King's Highway,  
Secondary Highway and Tertiary Road Systems for the  
Fiscal Year Ending March 31, 1967

COUNTY OR DISTRICT	PLAN NO.	TOWNSHIP	EFFECTIVE DATE	HWY. NO.	MILES
Algoma	P-2146-24	Shedden	July 14/66	17TC	5.150
	P-2341-40	Ryan	Jan. 26/67	17TC	0.770
	P-8123-16	Montreal Mining Co's. S. Location and N. Location	Oct. 13/66	17TC	7.250
Carleton	P-6062	Nepean	Sept. 8/66	416	0.770
	P-6062-2	Nepean	Feb. 16/67	416	1.700
Cochrane	P-7158-3	Wark	Sept. 29/66	655	2.380
	P-7165-3	Murphy	Sept. 29/66	655	6.650
Durham	P-2695-90	Darlington	April 28/66	401	0.150
Elgin	P-1539-32	Aldborough	Sept. 29/66	3	10.500
	P-2205-15	Aldborough	Aug. 25/66	76	10.000
	P-3248-25	Bayham	Jan. 12/67	3	5.500
Haliburton	P-2722-13	McClintock	June 30/66	60	7.180
Halton	P-1959-66	Trafalgar	Feb. 23/67	2	0.057
Hastings	P-1926-60	Thurlow	Dec. 15/66	37	1.500
	P-1945-17	Marmora	Oct. 27/66	7TC	0.420
	P-1953-37	Sidney	Jan. 26/67	33	0.350
	P-1953-38	Sidney	Feb. 16/67	33	1.060
	P-2773-38	Madoc	Jan. 26/67	62	0.680
	P-6057	Thurlow and Huntingdon	May 5/66	62	18.000
Huron	P-2543-38	Goderich	Sept. 22/66	21	11.000
Kenora	P-8134	Connell	Dec. 15/66	808	4.880
	P-8135	Unsurveyed Territory	Dec. 15/66	808	31.550
Lincoln	P-1912-26	North Grimsby	May 26/66	8	1.760
Manitoulin	P-2925-23	Whitefish River Indian Reserve	Mar. 2/67	68	7.420
Middlesex	P-2044-25	W. Williams	Sept. 29/66	7	0.306
	P-2208-7	Biddulph	Jan. 19/67	23	6.000
Muskoka	P-2857-28	Muskoka	Feb. 16/67	69	1.660
	P-3249-30	Franklin	June 2/66	60	7.940
	P-7008-11	Sinclair	Aug. 25/66	60	2.580
Nipissing	P-2259-14	Beaucage	Mar. 16/67	17	2.230
	P-3417-17	Caldwell and McPherson	Jan. 13/66	64	6.470
Norfolk	P-1814-71	Middleton	Aug. 11/66	3	0.227
Northumberland	P-1968-30	Murray	Feb. 16/67	33	0.150
Oxford	P-1814-71	Town of Tillsonburg	(See Norfolk County)		
	P-2861-30	Blenheim	Jan. 12/67	97	10.000
Parry Sound	P-2289-67	Strong	Mar. 17/66	11	8.570
	P-2441-21	Hagerman	Nov. 3/66	124	2.950
	P-2586-43	Croft	Nov. 10/66	124	9.750

COUNTY OR DISTRICT	PLAN NO.	TOWNSHIP	EFFECTIVE DATE	HWY. NO.	MILES
Peel	P-2093-61.....	Albion.....	Feb. 9/67	50	2.280
	P-5047-8.....	Toronto.....	April 28/66	27 (New)	4.400
	P-5075.....	Toronto.....	June 9/66	Belfield Expressway	0.760
Peterborough.....	P-1821-17.....	Emily and Smith.....	Dec. 15/66	7TC	9.650
	P-2313-21.....	Smith.....	Nov. 3/66	7B	5.930
Renfrew.....	P-6059.....	Ross and Horton.....	Aug. 25/66	653	5.500
Simcoe.....	P-1837-14.....	Adjala and Tosorontio.....	Aug. 11/66	89	5.780
	P-3021-57.....	Orillia.....	May 12/66	11B	0.890
Sudbury	P-2210-10.....	Hallam.....	Mar. 24/66	17TC	6.000
	P-2796-9.....	May.....	June 30/66	17TC	6.320
	P-7114-1.....	Dieppe.....	May 5/66	549	0.190
	P-7181-1.....	Antrim, Arden, Balfour, Baynes, Benneweis, Cartier, Cascaden, Chester, Dowling, Dublin, Edinburgh, Gouin, Hess, Hassard, Hazen, Invergarry, Jack, Mattagami, Marquette, Moncrieff, Muldrew, Neville, Noble, Paudash, Rayside, Roblin, St. Louis, Snider, Stetham, Ulster, and Vrooman.....	Nov. 10/66	144	122.000
	P-7190.....	Drury.....	June 23/66	658	5.060
	P-7190-1.....	Drury.....	Feb. 16/67	658	1.230
	P-7195.....	Denison.....	Dec. 21/66	658	1.240
	P-7195-1.....	Denison.....	Feb. 16/67	658	3.480
	P-2936-29.....	Casey.....	June 16/66	65	6.130
	P-3154-10.....	Eby.....	June 9/66	66	7.260
Thunder Bay.....	P-2821-77.....	MacGregor.....	Mar. 21/67	17TC	2.200
	P-3030-2.....	Vincent.....	Feb. 23/67	11	0.660
	P-3354-6.....	Hagey and Conacher.....	Mar. 21/67	586	3.300
	P-3361-20.....	Unsurveyed Territory and Twp. of Boucher.....	Mar. 21/67	599	7.880
	P-3426-7.....	Errington.....	Mar. 21/67	584	0.960
	P-3430-9.....	Fulford.....	Feb. 23/67	584	2.660
	P-3500-14.....	Pyramid.....	Feb. 23/67	17TC	2.360
	P-3501-9.....	Trewartha.....	Feb. 23/67	17TC	1.880
	P-3516-1.....	Unsurveyed Territory.....	Feb. 23/67	585	5.320
	P-1936-38.....	Fenelon.....	Sept. 15/66	35	1.140
Waterloo.....	P-1791-94.....	Waterloo.....	Dec. 21/66	7	2.950
	P-2078-16.....	Woolwich and Waterloo.....	Jan. 5/67	85	3.020
	P-4068.....	City of Kitchener and Waterloo Twp.....	June 9/66	Kitchener-Waterloo Expressway	2.540
	P-4068-1.....	City of Kitchener.....	June 9/66	Kitchener-Waterloo Expressway	2.500
	P-4068-2.....	City of Kitchener and Village of Bridgeport.....	June 9/66	Kitchener-Waterloo Expressway	1.900
	P-4068-3.....	City of Kitchener and Village of Bridgeport.....	June 9/66	Kitchener-Waterloo Expressway	1.040

COUNTY OR DISTRICT	PLAN NO.	TOWNSHIP	EFFECTIVE DATE	HWY. NO.	MILES
	P-4068-4	City of Kitchener and Village of Bridgeport	June 9/66	Kitchener-Waterloo Expressway	0.550
	P-4068-5	City of Waterloo and Village of Bridgeport	June 9/66	Kitchener-Waterloo Expressway	2.440
Welland	P-1915-84	City of Niagara Falls	Nov. 24/66	QEW	7.220
	P-2041-13	City of Niagara Falls	Sept. 29/66	20	2.500
	P-2043-71	Thorold	Feb. 9/67	58	3.910
	P-5045-18	Thorold	Oct. 27/66	406	6.950
Wentworth	P-1699-76	East and West Flamborough	Mar. 17/66*	6	1.900
	P-5079	Beverly	Feb. 23/67	Dundas By-Pass	1.780
	P-5080	Ancaster	Feb. 23/67	Dundas By-Pass	3.410
	P-5081	West Flamborough	Feb. 23/67	Dundas By-Pass	2.000
York	P-1960-177	Etobicoke	Feb. 16/67	QEW	0.570
	P-1960-178	Etobicoke	Mar. 9/67	QEW	0.170
	P-2093-61	Vaughan	(See Peel County)		
	P-2948-127	Etobicoke	Sept. 15/66	401	1.080
	P-3273-11	King	Oct. 6/66	9	3.340
	P-3273-13	King	Oct. 6/66	9	0.550
	P-5047-8	Etobicoke	(See Peel County)		
	P-5074	Etobicoke	June 2/66	Belfield Expressway	2.150

\* Omitted—Last Year's Report.



## APPENDIX No. 22

**Schedule of Reversions and Transfers of Sections of the King's Highway and  
Secondary Highway Systems for the Fiscal Year Ending March 31, 1967**

COUNTY OR DISTRICT	PLAN NO.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Algoma.....	P-2424-56.....	City of Sault Ste. Marie.....	June 4/66	17TC and 550	7.620
	P-2256-41.....	City of Sault Ste. Marie.....	June 4/66	550	6.290
	P-7016-11.....	City of Sault Ste. Marie.....	June 4/66	565	2.610
	P-7016-12.....	City of Sault Ste. Marie.....	July 16/66	565	2.630
Bruce.....	P-1861-38.....	Town of Walkerton.....	April 1/66	4	0.550
Cochrane.....	P-8107-3.....	Kendrey.....	July 9/66	807	1.170
Durham.....	P-2390-39.....	Clarke.....	Aug. 13/66	25	0.195
Elgin.....	P-2456-40.....	Village of Belmont.....	June 18/66	74	0.720
Essex.....	P-1661-22.....	City of Windsor.....	July 30/66	98	1.610
	P-1829-12.....	City of Windsor.....	July 30/66	2	3.500
	P-1854-22.....	City of Windsor.....	July 30/66	3	2.960
	P-1854-23.....	City of Windsor.....	Sept. 29/66	3	2.960
	P-2399-24.....	City of Windsor.....	July 30/66	18	0.540
	P-2840-36.....	City of Windsor.....	July 30/66	39	4.680
	P-3367-22.....	City of Windsor.....	Aug. 27/66	3B	3.500
Frontenac.....	P-3036-106.....	Kingston.....	May 28/66	401	0.410
Grenville.....	P-1825-21.....	Edwardsburgh.....	Oct. 1/66	16	0.300
Haldimand.....	P-1928-37.....	North Cayuga.....	July 23/66	3	0.168
	P-2955-8.....	North Cayuga.....	July 23/66	54	0.445
Hastings.....	P-2015-3.....	Elzevir.....	May 5/66	37	0.200
	P-2346-22.....	Village of Bancroft.....	Aug. 6/66	62	0.880
	P-3463-37.....	Mayo.....	May 14/66	500	1.230
Kenora.....	P-2143-44.....	Town of Dryden.....	Aug. 6/66	17TC	2.170
	P-2143-45.....	Town of Dryden.....	Oct. 1/66	17TC	0.500
Lanark.....	P-1796-37.....	Beckwith.....	April 1/66	7 and 15	0.080
	P-1832-28.....	North Elmsley.....	April 1/66	43	0.030
Leeds.....	P-2406-19.....	Yonge.....	April 1/66	42	0.300
Lincoln.....	P-3382-3.....	Niagara.....	April 1/66	8A	0.200
Manitoulin.....	P-2607-27.....	Howland.....	May 28/66	540	0.200
Middlesex.....	P-2661-26.....	Village of Glencoe.....	Aug. 27/66	80	0.858
	P-2719-29.....	Westminster.....	April 23/66	4	0.056
Muskoka.....	P-2119-90.....	Chaffey.....	April 16/66	11	0.080
	P-2537-95.....	Monck.....	Sept. 10/66	118	1.960
	P-2721-13.....	Franklin.....	July 2/66	60	0.100
Nipissing.....	P-2136-112.....	West Ferris.....	July 9/66	11B	4.750
	P-2785-102.....	Widdifield.....	April 1/66	North Bay By-Pass	0.030
Northumberland.....	P-1784-46.....	Percy.....	Nov. 26/66	30	0.010
	P-2516-52.....	Percy.....	April 1/66	45	0.500
	P-2516-56.....	Percy.....	Mar. 2/67	45	0.029

COUNTY OR DISTRICT	PLAN No.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Parry Sound	P-2255-77	Foley	April 1/66	69TC	0.100
	P-2255-78	Humphrey and Foley	Nov. 12/66	69	2.850
	P-2596-21	Nipissing	July 2/66	534	0.080
Peel	P-2093-58	Albion	July 2/66	50	0.280
	P-2093-59	Albion	July 2/66	50	0.110
Perth	P-2010-42	City of Stratford	July 9/66	7	0.750
	P-2052-44	City of Stratford	July 9/66	19	0.540
Peterborough	P-1955-48	Smith	May 19/66	28	1.600
	P-3247-9	Chandos	May 5/66	620	0.630
	P-3247-11	Chandos	Aug. 6/66	620	0.320
Prince Edward	P-2049-39	Hallowell	June 25/66	33	0.490
	P-2050-12	Ameliasburgh	April 1/66	33	0.600
	P-2200-38	Hillier	April 1/66	33	2.200
	P-2200-40	Hillier	June 25/66	33	1.733
Renfrew	P-2819-32	Alice	Aug. 13/66	62	2.000
	P-3543-11	Sebastopol	May 5/66	512	0.200
	P-6000-8	Brudenell	May 28/66	512	0.900
	P-6023-10	Radcliffe	April 30/66	515	1.180
Simcoe	P-1767-85	Orillia	June 25/66	11	0.190
	P-2429-29	City of Barrie	April 1/66	90	0.307
	P-2429-30	City of Barrie	April 1/66	90	0.530
	P-2429-31	City of Barrie	April 1/66	90	0.720
	P-2429-32	Vespra and Innisfil	April 1/66	90	0.560
	P-2756-88	Innisfil	Aug. 27/66	400	0.100
Stormont	P-2452-26	Roxborough	April 1/66	43	0.300
Sudbury	P-3054-14	McKim	April 1/66	544	4.360
	P-7182-6	Casimir, Jennings and Appleby	Oct. 15/66	535	0.300
Timiskaming	P-2934-28	Harris	July 23/66	65	0.140
Victoria	P-2031-45	Ops and Fenelon	Sept. 15/66	35	0.135
	P-5022-8	Digby and Laxton	June 18/66	503	0.290

## APPENDIX No. 23

**Schedule of Existing Roads Assumed as Portions of the King's Highway,  
Secondary Highway and Tertiary Road Systems for the  
Fiscal Year Ending March 31, 1967**

COUNTY OR DISTRICT	PLAN No.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Bruce.....	P-2338-13.....	Albemarle.....	Jan. 30/67	6	0.140
Cochrane.....	P-8107-2.....	Kendrey.....	July 9/66	807	1.170
	P-8107-4.....	Kendrey, Webster, Adanac, Homuth, Avon and Pinard.....	Sept. 22/66	807	44.500
Hastings.....	P-1945-17.....	Marmora.....	Oct. 19/66	7TCH	0.420
	P-1953-37.....	Sidney.....	Jan. 6/67	33	0.350
	P-2773-38.....	Madoc.....	Jan. 4/67	62	0.680
	P-6057.....	Thurlow and Huntingdon.....	Apr. 1/66	62	18.000
Kenora.....	P-8128.....	Unsurveyed Territory.....	Nov. 17/66	657	2.700
Kent.....	P-2942-24.....	Zone.....	Apr. 14/66	79	0.230
Lambton.....	P-2311-71.....	City of Sarnia.....	Mar. 15/67	402	0.038
	P-2311-72.....	City of Sarnia.....	Mar. 20/67	402	0.028
	P-2311-73.....	City of Sarnia.....	Mar. 20/67	402	0.090
	P-2311-74.....	City of Sarnia.....	Mar. 20/67	402	0.023
Leeds.....	P-2406-20.....	Yonge.....	Apr. 19/66	42	0.123
Middlesex.....	P-2044-25.....	W. Williams.....	Aug. 31/66	7	0.306
	P-2719-32.....	Westminster.....	Mar. 21/67	4	0.054
Muskoka.....	P-2857-28.....	Muskoka.....	Jan. 24/67	69	1.660
Norfolk.....	P-1747-22.....	Townsend.....	Apr. 13/66	24	0.120
	P-1864-30.....	Townsend and Woodhouse.....	Aug. 26/66	3	0.227
	P-2000-29.....	Town of Simcoe.....	May 2/66	3	0.010
	P-4061-3.....	Townsend.....	Aug. 26/66	24T	2.400
Renfrew.....	P-6059.....	Ross and Horton.....	June 1/66	653	5.500
Simcoe.....	P-3273-11.....	West Gwillimbury.....	Sept. 15/66	9	3.340
Sudbury.....	P-7114-1.....	Dieppe.....	Apr. 20/66	549	0.190
	P-7190.....	Drury.....	June 28/66	658	5.060
	P-7195.....	Denison.....	Nov. 28/66	658	1.240
Welland.....	P-1819-33.....	Thorold.....	Nov. 9/66	20	0.070
	P-5045-17.....	Thorold.....	Nov. 10/66	406	0.720
Wentworth.....	P-3070-46.....	Ancaster.....	June 3/66	403	0.040
York.....	P-1960-177.....	Etobicoke.....	Jan. 18/67	QEW	0.570
	P-1960-178.....	Etobicoke.....	Feb. 14/67	QEW	0.170
	P-2048-128.....	Etobicoke.....	Sept. 14/66	401	0.407
	P-2920-144.....	Scarborough.....	May 25/66	401	0.110
	P-2948-126.....	Etobicoke.....	Aug. 16/66	401	1.000
	P-3273-11.....	King.....	(See Simcoe County)		

## CHRONOLOGY—DEPARTMENT OF HIGHWAYS

966

- February 2—The first major contract awarded for the construction of the Kitchener-Waterloo Expressway.
- March 1—Department of Highways Estimates for 1966-67 presented to the Legislature by Hon. Charles S. MacNaughton.
- March 31—Plans were announced for the construction of the Gravenhurst By-Pass.
- April 1—Hastings County Road between Madoc and Foxboro was assumed as part of King's Highway 62.
- April 14—Plans to renovate the Rainbow Bridge Plaza at Niagara Falls were announced.
- June 16—Under an agreement between the Federal Department of Public Works, the Quebec Department of Roads and the Department of Highways, Ontario, a new Interprovincial Bridge will be constructed over the Ottawa River between Chenaux, Ontario, and Portage du Fort, Quebec.
- July 21—Highway 807 from Smooth Rock Falls to Fraserdale, a distance of 45 miles, was officially opened.
- October 13—Plans for widening Highway 27 to 12 lanes between the Queen Elizabeth Way and Highway 401 were presented to local council.
- October 28—The extension of Highway 400 from Highway 401 southerly to Jane Street (Toronto) was opened to traffic.
- October 28—The final link of the Ottawa-Queensway from Concord Street to Hurdman's Bridge was placed in service.
- October 31—The Brantford By-Pass section of Highway 403 was officially opened.
- November 1—Highway 101 from Chapleau to Wawa was opened to traffic.
- November 4—The Beaverton By-Pass was officially opened.
- November 24—Hon. George E. Gomme appointed Minister of Highways.
- December 9—New headquarters for D.H.O.'s Kingston District were officially opened.





## ORGANIZATION CHART



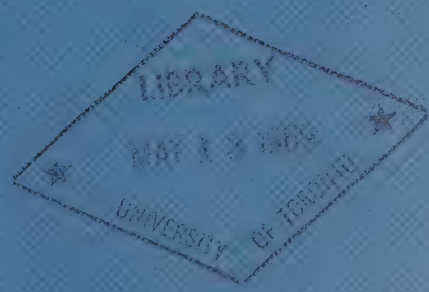
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# ANNUAL REPORT

for the fiscal year ending  
March 31st

1968



Department of Highways  
ONTARIO









# ANNUAL REPORT

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for the fiscal year ending  
March 31st

**1968**

Department of Highways  

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ONTARIO





TO THE HONOURABLE WILLIAM ROSS MACDONALD,  
P.C., C.D., Q.C., LL.D.

*Lieutenant-Governor of the Province of Ontario*

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to submit the Annual Report of the Department of Highways, Ontario, for the fiscal year ending March 31, 1968.

Respectfully submitted,  
GEORGE E. GOMME,  
*Minister of Highways.*

Parliament Buildings,  
Toronto, Ontario,  
December 31, 1968.



TO THE HONOURABLE GEORGE E. GOMME,  
*Minister of Highways, Ontario.*

Sir:

I have the honour to present the report of the activities of the  
Department of Highways for the fiscal year ending March 31, 1968.

Respectfully submitted,  
A. T. C. McNAB,  
*Deputy Minister.*

Downsview, Ontario,  
December 30, 1968.

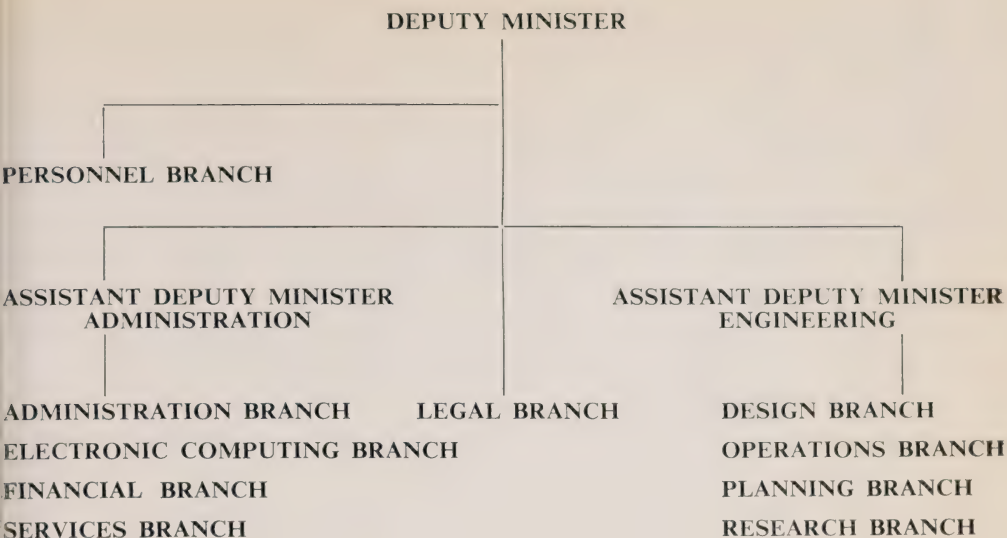






**Hon. George E. Gomme,  
Minister of Highways, Ontario.**





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**A. T. C. McNab.**  
**Deputy Minister, Department of Highways, Ontario.**

## **SUMMARY OF THE REPORT**

The department's net budget for the current fiscal year was \$423,026,272. Of this figure \$189,479,775 was provided for construction and \$77,986,211 for maintenance of the King's Highway System.

A record of \$155,560,286 was provided for assistance to municipal road-building programs throughout the province. Included in this figure, which is made up primarily of road and street subsidy payments to the municipalities, is an expenditure of \$19,988,286 for direct aid in connection with the Department's Development Road Program.

Under this program the Department of Highways contributes 100 per cent of the cost of reconstructing county and township roads which, because of traffic requirements, call for a higher standard of construction than the municipalities' financial capacity will permit. In 1967, 24 counties received this type of aid for construction on 97 projects covering 416 miles.

During the year 26 miles of Ontario's trans-provincial freeway Highway 401 were placed in service. A 16-mile section, of north lanes, from Iroquois easterly to the Aultsville Sideroad was opened in August and 10 miles from Gananoque easterly were opened in September. Grading of the remaining 15 miles is well advanced and contracts for paving were awarded by the end of the year.

Despite labour difficulties which delayed construction schedules, progress was made on the program to widen the Toronto By-Pass section of Highway 401 to 12 lanes. Before the end of the year an additional two miles were placed in service from the Highway 400 interchange to west of Islington Avenue. The construction of another seven miles was well advanced, covering one-and-a-half miles between Islington Avenue and Dixon Road and a five-and-a-half mile stretch from Hogg's Hollow, near Yonge Street, to Warden Avenue. Opening of a two-mile section west of Highway 400 brought the total now in service to eight miles.

Collector roads flanking the six-lane Queen Elizabeth Way from Islington Avenue to Highway 27 and new interchanges at Kipling Avenue and Islington Avenue are in the process of construction. Also, considerable preparatory work was under way for the construction of a new high-speed interchange at Highway 27 and the Queen Elizabeth Way.

Good progress was made on the extension of Highway 403 westerly from Aberdeen Avenue in Hamilton. Work was under way over a six-mile stretch from Aberdeen Avenue to Highway 2, east of Duffs Corners, including a new railway subway west of Main Street.

The department's program of assisting heavily-populated municipalities to provide inter-city expressways connecting with King's Highways was advanced with a high volume of work on the Kitchener-Waterloo Expressway and the Lakehead Expressway at Port Arthur-Fort William. The Department pays 75 per cent of such construction costs.

In November the first major contract for the Kitchener-Waterloo Expressway, a two-mile section of King Street in Kitchener, was completed. Late in the year another three-and-a-half miles of the expressway both east and west of King Street were under construction.

At Port Arthur-Fort William, two-and-a-half miles of the Lakehead Expressway from Highway 130 to the Fort William city limits were completed in the summer. Contracts for construction of an additional 10 miles were also awarded during the year. A contract for clearing nine-and-a-half miles of right-of-way for re-aligning Trans-Canada Highway 11 and 17 to connect with the east end of the expressway also was awarded. When completed, the expressway will form part of the Trans-Canada Highway.

Early in September the \$3 million Quinte Skyway and related construction on King's Highway 49 were completed to provide another important route to the Prince Edward County - Bay of Quinte district.

Widening of Highway 11 to four lanes northward to the Muskoka resort area proceeded on schedule. A five-mile section from Kahshe Lake Road northerly to the south end of the proposed Gravenhurst By-Pass was completed in November.

Plans were announced for two major freeways in Eastern Ontario. Highway 417 will extend from Ottawa to the Quebec boundary, a distance of 63 miles, and Highway 416 will be built from Ottawa southerly for 45 miles to the Macdonald-Cartier Freeway (Highway 401) in the vicinity of Johnstown.

The Madoc By-Pass on Trans-Canada Highway 7 was opened for traffic in September as part of the department's continuing program to improve sections of the 1,455-mile Tran-Canada Highway throughout the province. During the year 54 miles of this important route were reconstructed and work was under way on an additional 62 miles.

One of the major projects in Northern Ontario is the construction of the Sudbury-Timmins road, Highway 144. By the end of the year construction of the first 33 miles south of Highway 101, near Timmins, had been completed and grading an additional 15 miles was in progress. On the section from Gogama southerly to Benny, north of Sudbury, all contracts for clearing 53 miles of the right-of-way had been awarded. Grading of the first 16 miles north of Benny was completed and work on a further eight miles was under way.

On Highway 101, which was opened to traffic in 1966, between Trans-Canada Highway 17 and the northern route of the Trans-Canada Highway 11, two major contracts were awarded this year for paving. Paving was under way from Foleyet westerly for 15 miles and on the western end from Secondary Highway 547, near Hawk Junction, easterly for 26 miles. Both contracts are scheduled for completion in 1968.

Good progress was made during the year on the extension of Highway 631 — the Hornepayne - White River road. By the end of the year 15 miles of this route southerly from Hornepayne were nearing completion. A contract for constructing an additional 13 miles was awarded last November.

Reconstruction of Highway 614 from Trans-Canada Highway 17 to the base-metal mining community of Manitouwadge proceeded on schedule. From Manitouwadge southerly, 19 miles were completed and a contract was awarded in October covering the reconstruction of a 12-mile section northerly from Highway 17.

On Highway 651 between Highway 101 and Dalton, grading of the first nine miles of this new route from Highway 101 northerly was completed in August and the construction of the remaining eight miles to Dalton was in progress. When completed next year, the road will connect with an existing road between Dalton and Missanabie making possible a through drive of 33 miles north from Highway 101.

In northwestern Ontario the department's program to provide a first-class paved route over the 110 miles of Highway 105 between Trans-Canada Highway 17 and Red Lake was completed during the year.

The paving of another important northwestern Ontario route was completed this year with the finishing of a 38-mile stretch of Highway 11 between Atikokan and Fort Frances.

On Highway 71, a major north-south route between the Minnesota border and Trans-Canada Highway 17, the paving of an eight and a half-mile reconstructed



section southerly from Nestor Falls was completed in August and the reconstruction of an additional nine miles was well advanced. A contract for the reconstruction of another eight miles was awarded in December.

During the year two major contracts were awarded for the reconstruction of Highway 72 from Trans-Canada Highway 17 northerly to Patricia, a distance of 38 miles. In May, a contract was awarded for a 12-mile section southerly from Patricia and in August paving began on the previously reconstructed 26 miles northerly from Trans-Canada Highway 17. Both contracts are scheduled for completion in the summer of 1968.

In February, 1968, the proposed route for Highway 402, a new multi-lane 42-mile freeway between Sarnia and London, was announced.

An agreement was announced in March, 1968, to construct two new Welland Canal tunnels under a revised Federal-Provincial cost-sharing formula involving a total of more than \$43,000,000. One project is a combination highway and railway tunnel at Townline Road, estimated to cost more than \$30,000,000 and the other a \$13,000,000 highway tunnel at East Main Street, both in Welland.

Following is a summary of expenditures, as reported by the Financial Comptroller, with comparisons of the previous year:

	FISCAL YEAR ENDING	
	MARCH 31, 1968	MARCH 31, 1967
Gross capital payments on construction of King's Highways and Secondary Highways .....	\$197,028,260	\$173,910,400
Less: <i>Recoveries on</i>		
(1) Trans-Canada Highway		
(2) Ottawa-Queensway		
(3) Railway Bridges		
(4) City of Ottawa .....	7,548,485	5,424,979
Net capital payments on construction of King's Highways and Secondary Highways .....	\$189,479,775	\$168,485,421
Ordinary expenditures on King's Highways and Secondary Highways including maintenance and general operating expenses .....	77,986,211	72,135,232
Provincial subsidies on municipal roads and streets, development roads in unincorporated townships and connecting links .....	155,560,286	149,946,941
TOTAL NET EXPENDITURES .. .....	\$423,026,272	\$390,567,594

**Assistant Deputy Minister (Engineering)**  
**H. W. Adcock, P.Eng.**

**COMMUTER RAIL DIVISION**  
**W. T. Howard — Manager**

During April and May, 1967, completion of the construction of station and track facilities enabled GO Transit to meet the inauguration target date of May 23. On that day, 21 trains operated in both directions between Oakville and Pickering, and four serviced the area beyond Oakville to Hamilton. These trains made up the first phase of service which was followed by three successive phases beginning June 5, June 26 and September 5, culminating in full service of 51 trains daily during the Monday-Friday working week.

Total passenger trips per day averaged 5,600 at the start of the service. This increased to 11,000 per day after June 26, and to 12,500 after September 5. The daily average continued to increase through to December, and from December to March was over 16,000.

Although nearly 1,750 parking spaces were provided at the suburban stations at the start of the service, the popularity of GO Transit soon caused overcrowding at most of the parking lots, a situation which reached a peak in November. An extensive program of enlarging parking lots was completed during early December, resulting in a total of over 2,900 spaces, an increase of 67 percent over the original capacity.



**GO Transit Station at Oakville**

## **THE PROGRAM DIVISION**

**W. G. Wigle, P.Eng., Program Engineer**

The Program Division was formerly a component of the Planning Branch. However, as of February 1st, 1968, the Division is detached from the Planning Branch and the Program Engineer reports directly to the Assistant Deputy Minister (Engineering).

The change in reporting relationship has not affected the purpose and interior organization of the division. The primary concern remains the programming of construction which will continuously augment and rehabilitate Ontario's provincial highway network. To deal better with the several aspects of its purpose, the division is organized in four sections.

### **ADVANCE PROGRAM SECTION**

During the 1967-68 fiscal year, 430 new capital work projects were initiated. The projects ranged from minor isolated improvement of problem locations on existing highways, valued at a few thousand dollars, to construction of new freeway sections with an estimated value of several millions of dollars. In each case, information from various sources was assembled, evaluated and reconstituted in the form of Program Justification Reports. Some 50 ordinary resurfacing work projects were similarly processed.

Current and advance programs are continually in a state of flux. As program values expand or emergent work develops, projects must be deferred in order to keep programs within the framework of available funds. During the 1967-68 fiscal year 34 projects valued at \$9.4 million were added to the current schedule while 78 projects valued at \$52.1 million were deferred. The effect in terms of 1967-68 expenditure was an increase of \$1.0 million, \$4.8 million having been added and \$3.8 million deleted. One revision in a current schedule may necessitate re-scheduling of several of the more than 2,000 projects which make up the 5-year advance program. In each case, a careful appraisal of comparative priorities is required.

The "1968-69 Capital Construction Book" was prepared for distribution to the Legislature and news media when the budget for the new fiscal year was presented. Throughout the year some hundreds of special reports were prepared at the request of Ministers and Members of the Legislative Assembly, officials of Provincial and Federal Departments, public and private bodies and individuals. Monthly reports on the status of the 1967-68 Capital Construction Program were prepared and distributed within the department.

Inventories of provincial road sections, structures and railway level crossings were updated on the basis of newly-completed construction and re-appraisals from district offices, Materials and Testing Division, etc.

### **URBAN PROGRAM SECTION**

This Section processes applications for connecting link subsidy by urban municipalities on designated routes which connect to the provincial highway system at or near the municipal peripheries. Improvement of existing roads which have been designated as highway connecting links, is subsidized under the terms of normal agree-



ments. Special agreements may be negotiated under which the Department will subsidize construction of expressways through major urban centres.

Close liaison is maintained with municipal representatives from project initiation to construction. The original proposal, functional design, construction design and cost estimates are studied and approved as the engineering phase progresses. At any stage the Urban Program Engineer may recommend revisions to bring to work into line with Departmental standards and policies. Care is taken that only items eligible for subsidy are charged to the Department, and to the percentage laid down under the related agreement.

During the 1967-68 fiscal year, 81 projects, valued at \$8.3 million were processed, wholly or in part, under normal agreements, six projects with a value of \$1.5 million, under special agreements.

### **SCHEDULING SECTION**

Pre-contract engineering schedules for all construction work projects are arranged and maintained by this Section. Scheduling co-ordinators carry out liaison with the various engineering sections to ensure that schedules are fitted to work loads and are in every way realistic. Each project is tracked from initiation to completion. Problems in earlier phases of the work may delay issue of a project to follow-up Sections and schedules have to be adjusted accordingly. Changes in current and advance programs may also necessitate re-scheduling of pre-engineering operations. Very few projects conform to original schedules throughout the entire pre-engineering process.

Contract advertising and award schedules are dependent as much on budget considerations as on contract preparation. Continuous adjustment of these schedules is made to keep expenditures as closely as possible in line with available funds. Advancement of a schedule will result in increased expenditure during the current fiscal year on the project so manipulated. Deferment, of course, has the reverse effect.

Probably some 75% of contracts proposed for award in an average fiscal year are subjected to scheduling adjustments. In May of 1967, shortening of work schedules by contractors, and the construction industry strike in Metropolitan Toronto, complicated the status of the construction program. In that month, award of 21 contracts was deferred. Other substantial adjustments were made subsequently, with the result that at the end of the fiscal year construction expenditure varied from available funds by less than one-third of one percent.

### **SPECIAL STUDIES SECTION**

This section engages in statistical studies which have a general relation to highway planning rather than a concern with specific highway projects.

A typical assignment during 1967-68 was an inquiry into rail rapid transit as an alternative to the automobile in the movement of commuter-type traffic. Basic data was obtained from all available sources. Material was abstracted from earlier studies by other authorities in which rail rapid transit was only one aspect of a comprehensive problem as indeed it now is to us.

Another study had the general purpose of investigating possible restriction of



motor-vehicle stopping and parking, as well as pedestrian movements, on freeway rights-of-way adjacent to the travelled road. The study considered the effect of such activity on the free, safe flow of high-speed traffic.

Our full-scale study of control-of-access continued. Thorough investigations were made into related problems such as:

The by-pass as a relief route and its effect on business;

Expropriation and compensation, with special reference to acquisition of land access rights, easements and airspace utilization over highway rights-of-way;

A comparison of freeways and other type roads in respect of accident experience and causation.

In addition to studies such as the above, this Section continued to deal with numerous requests, from within and outside the department for statistical, economic and fiscal analyses in the field of highway transportation. Contact was maintained with research people for other highway authorities, universities, transport associations, etc., in Canada and abroad, on matters of mutual interest.

## ADMINISTRATION BRANCH

### ENGINEERING AUDIT SECTION

**D. M. Hopper, Superintendent**

The Engineering Audit Section is broken down into two main groups, being Field Audit and Contract Checking.

#### FIELD AUDIT GROUP

This group, under the direction of the Field Audit Supervisor, consists of an Estimating Group located at Head Office, Downsview, and various field staff who are established on a regional basis in the five different regions throughout the Province.

Each region operates as a unit under a Regional Supervisor of Engineering Audit. The regional staff consists of two Assistant Supervisors, one Field Party Supervisor, and two to four field parties, depending on the requirements in the construction season. Each region also has a Weigh Inspector and an Office Draftsman. The regional staff conducts routine spot checks by field survey and by examination of office records on pre-Engineering projects, construction contracts, and day labour projects in the various districts. These audits are performed on all capital, Maintenance, development road and connecting link contracts. Audits are also carried out as required on these various contracts with respect to claims, new tender items, and force accounts. Pre and post-contract review meetings are also attended by the Regional Supervisor or his designated assistants.

Following the various spot checks and review of records, reports are prepared by the Regional Supervisor's staff and submitted to Engineering Head Office at Downsview where they are forwarded, under covering letter, to the various district engineers and other persons involved.

The Head Office Estimating Group is responsible for a number of functions which include spot checking of various pre-engineering estimates to ensure that they adhere to the normal estimating procedures and rechecking random final estimates which have been processed by the Contract Checking Group at Head Office or by the Regional Office staff.

The Estimating Group is further responsible for the compiling of a number of various types of reports. On request of the Claims Engineer, various quantity or monetary calculations are compiled for his use.

In the winter months the regional staff is utilized in the Regional Office on the checking and approving of final estimate quantities submitted by the various districts with respect to the various types of contracts in those districts.

During the fiscal year 1967-68, 323 field audits were performed, 326 office audits and 2,350 weighing audits.

#### CONTRACT CHECKING GROUP

This group is under the direction of the Contract Checking Supervisor and is subdivided into four checking units, and one Drafting Group which prepares "As Constructed Plans and Profiles".

The basic function of the checking group is the approval of final estimate pay quantities submitted for the various types of contracts which have been checked in their progress stages in the Regions. A report outlining the condition of the final estimate and the final approved pay quantities is prepared on all the capital, maintenance, development road, and some connecting link contracts. These reports are forwarded to the various Districts for the preparation of the final payment certificate. In addition to approving final payment quantities, the reports also outline deficiencies in the records and the methods of payment and are used as a basis of standardizing and improving records and payment procedures.

The Drafting Group prepares plans and profiles showing the latest "As Constructed" data, and this data is derived from the construction records submitted with the various final estimates.

For the fiscal year 1967-68, the following table lists by Districts, the number of contracts checked, with their total monetary value.

	CONSTRUCTION		MAINTENANCE		INVITATION BIDS		DEV. ROADS	CONN. LINKS
	NO.	VALUE	NO.	VALUE	NO.	VALUE		
Chatham .....	8	\$ 2,177,503	10	\$ 253,332	—	\$ —	—	1
London .....	14	3,792,198	6	204,597	—	—	2	4
Stratford .....	12	3,737,087	10	173,759	—	—	3	—
Hamilton .....	15	4,858,072	16	1,513,514	6	174,825	—	3
Owen Sound .....	14	2,037,209	10	945,072	1	7,490	—	3
Toronto .....	24	7,474,018	16	1,375,419	8	46,997	2	3
Port Hope .....	11	2,917,177	16	703,755	3	14,035	12	6
Kingston .....	10	8,799,748	13	445,692	1	14,264	9	4
Ottawa .....	16	7,303,539	5	94,167	8	207,166	14	4
Bancroft .....	9	1,365,381	4	150,645	—	—	9	1
Huntsville .....	13	2,696,758	9	160,921	2	14,969	1	—
North Bay .....	10	3,793,453	7	419,676	—	—	3	—
New Liskeard .....	14	4,741,589	8	262,886	—	—	—	1
Cochrane .....	5	731,475	7	203,247	—	—	—	1
Sudbury .....	9	1,552,555	11	385,149	1	5,355	1	—
Sault Ste. Marie ..	13	6,503,128	3	163,453	—	—	1	1
Fort William .....	16	3,254,921	4	112,779	2	128,336	—	3
Kenora .....	12	6,264,699	—	—	1	15,880	—	—
TOTALS .....	225	\$74,050,510	155	\$7,568,063	33	\$629,317	57	32

## EXECUTIVE ENGINEER

L. E. Walker, P.Eng.

## INFORMATION SECTION

E. A. Ingraham, Chief Information Officer

The Information Section is responsible for the collection and issuance of general information regarding the department's activities to the public, the news media, Federal and Provincial Government departments and other highway and technical authorities.

Numerous press releases, fact sheets and illustrations were sent to all Ontario newspapers, radio and TV stations and special material was prepared for feature articles in the trade press and for other technical publications.

The section is also responsible for the printing and distribution of the Official

Ontario Road Bulletin (issued every two weeks, May to November), the Winter road reporting service to radio stations, the department's Annual Report and the employee magazine, DHO News.

Distribution by the section during the fiscal year also included the initial mailings of the Capital Construction program, the Official Road Map of Ontario, the Macdonald-Cartier Freeway Map (Highway 401 strip map), the Roads to Recreation map, Northern Ontario Road Map, DHO Ferry Schedule and special reports.

The Department marked its 50th Anniversary by publishing "The Back Fifty", a special 26 page supplement of the DHO News.

Over 30 million viewers have seen three film productions distributed by the Department, Roads to Recreation, Carnival Country and Roads to Prosperity. In total, a DHO film was shown every day of the year to TV audiences somewhere in the United States or Canada through cost-free public service arrangements with TV stations.

Public service film clips on safety were distributed to all Ontario TV Stations and United States border stations where channels are directed to Ontario viewers.

## FILMS

Skyway to the Future  
White Fallout  
Highway Housekeeping  
Roads to Recreation  
Carnival Country  
Roads to Prosperity  
TV Public Service Clips

## PUBLICATIONS

Official Road Map  
Northern Ontario Road Map  
Roads to Recreation Road Map  
Macdonald-Cartier Freeway Map  
DHO Ferry Schedule  
Road Bulletin  
Annual Report  
DHO News  
The Back Fifty

## ARTS AND EXHIBITS SECTION

**J. W. Faretis, Arts and Exhibits Officer**

This section produces most of the art work required by the Department and creates models for planning, instructional and display purposes.

During the year, six mobile display units were assigned to the regions for showing at 29 fairs throughout the province.

Four special exhibits were built for the Canadian National Exhibition, the Central Canada Exhibition, the Lakehead Exhibition and the London Western Fair.

## PHOTOGRAPHY SECTION

**B. A. Dunstall, Photographic Supervisor**

The Photography Section is responsible for all photographs taken for official and publicity purposes.

During the year the section completed 1,800 assignments, taking 12,864 photographs, over 1,000 colour slides and 10,000 feet of 16 mm. movie film. It produced 28,895 prints.



Photographs of construction in progress were taken in all districts and a pictorial inventory of bridges was also made.

High speed motion pictures and still photographs were taken for evaluation by the Research Branch throughout the vehicle impact tests conducted at Fingal, Ontario. A film was made for the Maintenance Section to be used for the training of field staff and photographic methods were developed to aid in studies of vehicle skid resistance and freeway design.

## **HISTORICAL RESEARCH SECTION**

**N. D. Bennett, Centennial Project Consultant**

The Historical Research Section is engaged in the research, documentation and narration of historical material pertaining to roads and highways in Ontario.

Many volumes have been assembled containing such information and collections of historical photographs.

Writers and university students have drawn on the material during the year for various projects.

Working in co-operation with the Arts and Exhibits Section, narrations were produced for models displayed at fairs and exhibitions throughout the Province.

## DESIGN BRANCH

John Walter, P.Eng., Director of Design

## ROAD DESIGN DIVISION

D. W. Farren, P.Eng., Road Design Engineer

During this fiscal year, the Road Design Division completed design drawings and contract documents and prepared quantity and cost estimates for 271 contracts covering more than 1,000 miles of highway construction and reconstruction, which are summarized as follows:

Grading and Drainage .....	7 miles
Grading, Drainage and Granular Base .....	286 miles
Grading, Drainage, Granular Base and Hot Mix Paving .....	241 miles
Grading, Drainage, Granular Base and Concrete Paving .....	15 miles
Grading, Drainage, Granular Base, Cement Stabilized Base and Hot Mix Paving .....	11 miles
Granular Base and Hot Mix Paving .....	23 miles
Hot Mix Paving .....	76 miles
Asphalt Resurfacing .....	192 miles
Clearing .....	148 miles
Prime and Surface Treatment .....	48 miles



Award winner — Seine River Bridge Highway 11 west of Atikokan—(Design Branch)

In addition to those summarized above, designs were completed and contract documents, drawings, and estimates prepared for 39 structure and approach contracts and 64 miscellaneous contracts.

Some of the major undertakings included in the above are:

1. Commencement of design for the second Welland Canal Tunnel on East Main Street in Welland.
2. Completion of design of Q.E.W.-Highway 27 Interchange.
3. Commencement of design of Highway 27 from Q.E.W. to Highway 401 including the Highway 401-Highway 27 Interchange.
4. Commencement of design of Q.E.W. from Hamilton to Fort Erie.
5. The design of Q.E.W. from Royal York Road to Humber River.
6. Continuation of design of Kitchener-Waterloo Expressway.
7. Commencement of design of the E. C. Row Expressway in Windsor.
8. The design of St. Mary's By-Pass with Cement Stabilized Base.
9. The design of the last two contracts for completing the paving of Highway 401 between Gananoque and Brockville, this section is to be opened by November 30, 1968.
10. The design work for the initial stage of the Lakehead Expressway from Highway 61 to Spruce River Road is 90 percent complete.

## CENTRAL REGION

**G. K. Hunter, P.Eng., Regional Road Design Engineer**

This region is responsible for all road design projects in the Toronto, Hamilton and Port Hope Districts. Sixty projects were designed during this fiscal year as follows:

Grading, Drainage, Granular Base and Hot Mix Paving .....	60.5 miles
Grading, Drainage, Granular Base, Concrete Paving, Structures and Illumination .....	15.2 miles
Asphalt Resurfacing .....	59.4 miles
Grading, Drainage, Granular Base .....	16.6 miles
Clearing, Grubbing and Fencing .....	5.3 miles
Structure and Approach Contracts .....	15 Projects
Miscellaneous Projects .....	14 Projects

## EASTERN REGION

**S. J. Markiewicz, P.Eng., Regional Road Design Engineer**

This region is responsible for Road Design projects in the Kingston, Ottawa and Bancroft Districts. Fifty projects were designed during this fiscal year as follows:

Grading, Drainage and Granular Base .....	69.6 miles
Grading, Drainage, Granular Base and Hot Mix Paving .....	66.5 miles
Grading and Drainage .....	5.1 miles
Granular Base and Paving .....	8.1 miles
Resurfacing .....	10.4 miles
Clearing .....	80.2 miles
Structure and Approaches .....	7 Projects
Miscellaneous Projects .....	4 Projects

**SOUTH-WEST REGION****W. Zonnenberg, P.Eng., Regional Road Design Engineer**

This region is responsible for Road Design work in the London, Chatham, Stratford and Owen Sound Districts. Fifty-six projects were designed during this fiscal year as follows:

Grading, Drainage and Granular Base .....	32.8 miles
Grading, Drainage, Granular Base and Hot Mix Paving .....	68.0 miles
Grading, Drainage, Granular Base, Cement Stabilized Base and Hot Mix Paving .....	11.1 miles
Hot Mix Paving .....	10.1 miles
Resurfacing .....	36.4 miles
Structure and Approaches .....	13 Projects
Miscellaneous Projects .....	14 Projects

**NORTHERN REGION****H. McArthur, P.Eng., Regional Road Design Engineer**

The Northern Region is responsible for Road Design work in the Huntsville, North Bay, New Liskeard, Sudbury, part of Sault Ste. Marie, and part of Cochrane Districts. Seventy-one projects were designed during this fiscal year as follows:

Grading, Drainage, Granular Base and Hot Mix Paving .....	44.3 miles
Grading, Drainage and Granular Base .....	109.7 miles
Resurfacing .....	66.5 miles
Granular Base and Paving .....	8.6 miles
Hot Mix Paving .....	30.2 miles
Prime and Surface Treatment .....	48.4 miles
Structure and Approaches .....	3 Projects
Miscellaneous Projects .....	23 Projects

**NORTH-WEST REGION****H. Hurrell, Regional Road Design Superintendent**

This region is responsible for Road Design work in the Kenora, Fort William, part of Cochrane, and part of Sault Ste. Marie Districts. Thirty-four projects were designed during this fiscal year as follows:

Clearing .....	62.9 miles
Grading and Drainage .....	1.5 miles
Grading, Drainage, Granular Base .....	57.3 miles
Grading, Drainage, Granular Base and Paving .....	1.9 miles
Granular Base and Paving .....	6.3 miles
Hot Mix Paving .....	35.2 miles
Resurfacing .....	19.6 miles
Structure and Approaches .....	1 Project
Miscellaneous Projects .....	9 Projects



## HEAD OFFICE

**J.M. Ford, P.Eng., Special Projects Design Engineer**

Road Design Head Office is responsible for the following centralized operations.

### THE DESIGN SERVICES ENGINEER'S SECTION

*Intersection Detail Design Group* — This section, under the direction of Intersection Detail Design Supervisor, is responsible for the detail design of horizontal and vertical alignment of interchanges and channelizations. Final contract drawings of detailed intersection treatment and field layout grid are prepared by this group and incorporated in highway contracts.

A total of five cloverleaf-type interchanges, two grade separated interchanges of various designs, and 34 channelizations have been designed during the fiscal year.

*Geometric Design Group* — This section, under the direction of the Geometric Design Engineer, is responsible for the preparation of geometric layout plans, precise alignment traverses and co-ordinate control systems. The following projects were completed:

- (a) The detail design of horizontal and vertical alignment of three interchanges.
- (b) Major revisions to three interchanges.
- (c) The detail graphical design of three interchanges and one channelization.
- (d) Detailed design calculations of alignment and elevations for several retaining walls.
- (e) Detailed standards designed for transfer lanes and basket weaves for freeways.

### THE HEAD OFFICE PROJECT DESIGN ENGINEER'S SECTION

*Project Review Group* — This group is responsible for reviewing all projects submitted from the Regions for accuracy and for conforming to current policies. During this year, this group scrutinized more than 270 projects, representing more than 1,000 miles of highway construction.

*Highway Standards Group* — is under the direction of the Highway Standards Engineer and is responsible for the preparation of all Department standards for inclusion in projects.

*Procedures Officer* — This position has been established to administer the training program for promotional purposes for Road Design employees, and in addition, he is responsible for editing the Estimating Manuals used by the Road Design Division.

*Design Studies Engineer* — This position is responsible for liaison with the Electronic Computing Branch and also for conducting special studies on subjects that arise. In this year, several routine studies were carried out and the road design computer programs were extended to incorporate technical and procedural changes in Road Design technology.

### SPECIAL STUDIES CARRIED OUT:

1. Manual of Design for Highway Illumination Systems was completed.

2. Committees were set up to study various aspects of safety in design, specifically to investigate the subjects of Roadside Hazards on King's Highways.

**BRIDGE DIVISION**

**B. R. Davis, P.Eng., Bridge Engineer**

The work of the Bridge Division is subdivided into Bridge Planning Section, Bridge Design Section, Bridge Control Section and Municipal Bridge Liaison Section. The work carried out within each section is described as follows:

**BRIDGE PLANNING SECTION**

**S. McCombie, P.Eng., Bridge Planning Engineer**

The Regional Offices, which had been set up the previous year, showed their value as bridge information was made available more easily to the Planning, Design and Operations Branches. Computer Programs were developed by the Hydrology Sub-Section for the calculation of backwater at bridges and Frequency Analysis of Flow Data.

Further work was carried out on the scour studies started in 1966. Work was started to extend the range of the existing graphs for culverts not presently covered. Further work was carried out to refine the methods used in the determination of design discharges. An outline was prepared for the proposed guide for Bridge Hydraulics. This guide is part of a project being carried out in co-operation with the Canadian Good Roads Association.

**BRIDGE DESIGN SECTION**

**C. S. Grebski, P.Eng., Bridge Design Engineer**

During the fiscal year the Bridge Design Section completed 139 Bridge Designs and contract drawings.

Bridges Designed	— 139
Retaining Walls Designed	— 16
Standard Culverts Designed	— 225
Special Culverts Designed	— 16

Effective April 1, 1967, Regional Bridge Project Engineers were appointed to carry out the Design work on a Regional basis. The Engineers are as follows:

- Central Region (1) — M. Gvildys
- Central Region (2) — B. Richardson
- South-West Region — J. Keen
- Eastern Region — W. Lin
- Northern Region — A. Radkowski
- North-West Region — K. Bassi

**TYPES OF STRUCTURES**

Prestressed Precast Beams .....	51
Post-tensioned Cast-in-place ....	45

Structural Steel .....	14
Reinforced Concrete .....	24
Timber .....	3
Revisions .....	2
	<hr/>
Total .....	139
	<hr/>

The increase in the number of post-tensioned cast-in-place designs is indicative of an increase in the number of complex structures required for interchanges and expressways in and around cities. Eleven structures were designed for the Kitchener-Waterloo Expressway and nine for the Hwy 406-St. Davids Rd. Interchange. Designs for eight structures on the Hwy. 401-Hwy. 5 Interchange and 10 on the Hwy. 401-Hwy. 27 Interchange were completed during the year. Design work is still in progress on the latter project which involves more than 30 grade separation structures. Many of the interchange structures are remarkable for their size, complexity and appearance. Several members of the staff received Canadian Design of Merit Citations in the 1967 Concrete Awards Program for such structures. The Awards Program is sponsored by the Canadian Design Council and the Federal Government Department of Industry.

A swing bridge was re-designed as a double-leaf bascule bridge. Although more expensive, this type of bridge has many advantages, chiefly the elimination of the centre pier and the increased speed of operation. The mechanism proposed will be the first of its kind to operate hydraulically, and is expected to be a considerable improvement on previous electro-mechanical devices.

A number of studies, evaluations and reports were undertaken by the section on major projects, often in a consulting capacity to other sections. Among these were the reports on the St. Joseph's Island Bridge near Sault Ste. Marie.

The Feasibility Study for the East Main St. Tunnel was completed, and detailed design work was begun. This structure is the first of the highway tunnels under the New Welland Canal diversion around the City of Welland. The detailed investigation of many alternatives and innovations in the feasibility study stage led to a very substantial reduction in the anticipated cost.

In conjunction with the Electronic Computing Branch, work continued on the enlargement and updating of the Bridge Program Library. Sixteen new programs were developed. One of these made it possible to design and to print contract drawings for retaining walls entirely by computer. Another led to the automatic draughting of complex intersection alignments.

Work has continued in the development of standard drawings and design aids. Several miscellaneous assignments were carried out, including revisions to standard overhead sign support structures and development of breakaway and slip bases for lighting poles.

## BRIDGE CONTROL SECTION

**A. E. McKim, P.Eng., Bridge Control Engineer**

The Bridge Contract Engineer prepared 134 D4 Estimates and Special Provisions for structure contracts for a total value of \$24,387,769.



The Materials Control office prepared 876 purchasing requisitions for materials to be supplied by the Department with a value of \$4,175,000. These requisitions covered a wide variety of material, including 11,975 tons of reinforcing steel, 148,056 lineal feet of piling and 45,700 lineal feet of bridge hand railing.

Arrangements were also made to have these materials inspected by private companies specializing in this work.

Technicians of the Control Section provided quality control inspection on all precast, prestressed beams manufactured for the Department, as well as those for a large number of Municipal contracts. Engineers of the section continued their co-operation with District field staff on all phases of bridge construction and particularly in checking and inspection of falsework.

During the year shop drawings were reviewed for 22 structural steel contracts totalling 14 bridges. Five of these contracts were carried over from the previous year. A total of 4,916 tons of structural steel was erected during this period.

### **MUNICIPAL BRIDGE SECTION**

**K. L. Kleinstein, P.Eng., Municipal Bridge Liaison Engineer**

All municipal structures subsidized by the Department of Highways are reviewed by the Municipal Bridge Section to insure public safety, to reduce costs, and to increase the life of the structures by means of recommended improvements to design. The following submissions were approved:

Preliminary Plans .....	180
Final Bridge Plans .....	246
Culvert Plans .....	292
Misc. Buildings and Retaining Walls .....	35
Prestressed Concrete Shop Drawings .....	78

During the year, 42 field hydrology investigations, 108 river catchment studies and 238 site inspections of old bridges were made. These involved problems regarding river restrictions, ice jams, alignment and private property. In conjunction with the Department of Transport, Ontario, 49 load restriction by-laws were reviewed to determine if the restrictions were justified. Precontract Review meetings and local Municipal meetings were attended when necessary.

### **SUMMARY OF BRIDGE CONSTRUCTION**

During the calendar year 88 structures, consisting of 19,574 feet of bridging and 148 concrete culverts, ranging in spans from 4 to 20 feet were completed.

### **PHOTOGRAMMETRY DIVISION**

The Photogrammetry Division through the use of aerial photographs supplies an ever-increasing volume of the survey requirements of this Department. This increase is reflected in the interest being shown in photogrammetry and in the increased volume of projects processed by this Division in all stages of the highway engineering process—planning and location, functional planning, design and construction.



This year saw the integration of the Cartography Section into the Photogrammetry Division thereby enlarging the staff complement to 52. This re-organization resulted in revised specifications being compiled for the entire drafting staff which fully recognizes the increased responsibilities in both the Photogrammetric and Cartographic Drafting groups.

County and township maps received a general updating and a new system of presenting the latest cartographic information to the public was adopted.

A new rectifying camera was purchased this year. This precision instrument will facilitate the production of controlled large-scale photo plans and mosaics.

Our electronic digitizing and precision co-ordinatograph equipment was used to digitize various traffic studies in conjunction with the Traffic Division.

Research continued in conjunction with the University of Toronto to the completion of an analytical program for horizontal and vertical control to be used on various stereoplotting projects.

There was a definite increase in the number of visitors to this Division as well as instructional periods for supervisory personnel within the Department.

The regionalization program progressed with the establishment of a Regional Photogrammetrist, Eastern Region.

## **INTERPRETATION AND STUDIES SECTION**

It is the responsibility of this section to prepare, through photographic interpretation, techniques, area studies, drainage and hydrology studies, line locations, mosaics, photo plans, etc.:

Due to increased activity in the Northern Ontario, line location on photographs increased to 565 line miles on four separate projects.

Area studies for new route locations encompassed some 16,700 square miles. This resulted in reports for four separate studies furnished to Functional Planning.

There were 62 drainage studies covering 1,561 square miles and 10 hydrology studies covering 1,006 square miles completed.

A total of 71 mosaics covering a total area of 21,201 square miles at various scales ranging from 50' to 1" to 5,600' to 1" were prepared.

Five projects covering 141 square miles were enlarged to 200' to 1" on stable base material for Functional Planning report purposes.

Seipiaflex, a process whereby mosaics are photographed and reprinted on stable-base material for reproduction purposes, were prepared for the various regions: 11 were prepared at 100' to 1" covering 620 square miles, 25 were prepared at 400' to 1" covering 862 square miles and three at the scales of 500', 800' and 1,500' to 1" covering 256 square miles.

## **STEREOPLOTTING AND CONTROL SECTION**

It is the responsibility of the Section to perform precision photogrammetric instrumentation and related activities in order to produce required 200' to 1" plans, 40' to 1" plans and cross-sections.

31 engineering plans at a scale of 40' to 1" with 2' contours (covering an approximate area of 7,320 acres).

22 engineering plans at 200' to 1" with 5' contours covering some 133.890 acres.

18 line miles of original cross-sections at 50 and 25 feet intervals.

Control, photography and camera work were incorporated to produce six photographic plans at the scale of 100' to 1" covering 7,150 acres. These plans, held to a field survey accuracy, visually portray a wide band of detail.

## **DRAFTING SECTION**

This section is responsible for the photogrammetric and cartographic drafting activity relating to this Department:

The photogrammetry drafting Sub-Section produced the required precision drafting plans that were processed by the Stereoplotting and Control Section.

The 1968 Official Ontario Road Map, Macdonald-Cartier Freeway Strip Map and Roads to Recreation Map bases were re-scribed and revised to show all new information prior to the lithographing by private printing agencies.

Highway pavement types and numbering were edited for a new printing of the special map of Northern Ontario and a special black and white District and Regional Map was prepared showing the Ontario Highway System.

New map bases were completed for the District of Nipissing South and the County of Hastings at the scale of 4 miles to 1" for lithographing.

During the year, bases at the scale of 4 miles to 1" were revised and maps printed of the counties of Simcoe, Northumberland, and Durham, Ontario, Peterborough and Victoria, Dufferin, Huron, Perth, Waterloo and Wellington, Carleton, Lanark, Leeds and Grenville.

A new map base was completed for Nipissing North (Upper Portion) at the scale of 2 miles to 1".

All bases were revised on County and District maps showing new highways, County Roads, and municipal limits at the scales of 1 mile to 1" and 2 miles to 1".

New map bases were commenced for the Districts of Manitoulin and Algoma (South East and South West portion) at the scale of 2 miles to 1".

Index maps were prepared at the scale of 1 mile to 1" and 2 miles to 1" to promote distribution of departmental maps.

## **PHOTOGRAPHIC LIBRARY**

During this year some 16,501 contract aerial photographs and 1,089 glass plate diapositives were ordered and processed.

## **ENGINEERING SURVEYS DIVISION**

**Y. Andersen, O.L.S. — Superintendent**

The Engineering Surveys Division is responsible for all the field engineering work

and plan preparation work for the Planning and Design Branches in all regions but the Northwestern, as well as to establish Vertical Control (Precise Levels) and Horizontal Control (Co-ordinate control) on a province-wide basis. Other responsibilities, besides work for the current and future pre-engineering program, are: Standard surveys and plans of existing highways and secondary highways; miscellaneous surveys and plans for other various Branches and Divisions; preparation and distribution of Strip Maps; updating existing plans in regard to property limits and the training of our technicians and draftsmen.

This year, some 1,161 miles of surveys, 1,269 miles of plans, 97 bridge site plans, 35 railway crossing plans and other associated surveys and plans were completed.

A summary of all work completed is as follows:

## HEAD OFFICE

Head Office Engineering Surveys is comprised of the following groups: Vertical and Horizontal Control Surveys, Training, Head Office Drafting and the Strip Plan Group.

### VERTICAL CONTROL SURVEYS (Precise Levels)

The purpose of Vertical Control is to establish permanent and accurate Bench Marks by first order leveling along highways throughout the Province. The level routes are scheduled whenever possible to meet forthcoming work projects as well as to cover Geodetic Bench Mark gap areas. They are set in such a way that will accommodate preliminary planning, design and construction and still remain permanent after completion of road construction.

During the year, 201 Precise Level Bench Mark tablets were set and Geodetic elevations assigned, which covered a distance of 177 miles. These were set along the following routes:

Highways 126 and 22	London to Mount Brydges
Highways 22 and 7	Four Corners to Sarnia
Highways 10 and 7	Brampton to Acton
Highway 417 prop.	Ottawa to Vars (prov.)
Highway 401	Highway No. 8 to Highway No. 73
Highway 7	Acton to Rockwood
Highway 8 prop.	Petersburg to New Hamburg

In addition to the above:

A new Test Area was set at Earlton for bridge movement control, for the Bridge Maintenance Section.

Elevations were taken at all six Frost Test Sites as well as at the New Liskeard test area.

Copies of the results of Vertical Control Surveys (bench mark elevations and descriptions) were distributed to the District and Regional Offices; Department of Energy, Mines and Resources, Ottawa; Ontario Department of Public Works; Ontario Department of Energy and Resources Management and various Municipal Engineering Offices.



## HORIZONTAL CONTROL SURVEYS (Co-Ordinate Control)

The purpose of Horizontal Control is to establish third order co-ordinate reference stations to an accuracy being not less than 1:10,000 in distance and not more than one second in angular measurements. The reference stations are used to ensure that all phases of engineering will be of the same datum, from the preliminary planning to the construction stage.

During the year, 193 Horizontal reference stations were set with co-ordinate values computed and position sketches covering some 91 miles. These were set in the following areas.

- Hamilton East-West Expressway
- North Bay By-Pass south end
- East Main St., "Welland"
- Baysville easterly
- E. C. Row Expressway
- Highway No. 401 between Highways 115 and 33
- Ottawa Queensway

## CONTROL STAFF

Midway through the year another party was formed, bringing our field staff complement to four operating field crews, two of which were assigned to Vertical Control and two assigned to Horizontal Control, all staff being trained in both phases of Control work. The office computation, and drafting work for the Control phases, were assigned to a few members of the Head Office Drafting Staff after thorough training on Co-Ordinate Control computations.

## TRAINING

During the year six courses were conducted and two examinations were given by this Division at which 83 candidates attended.

Courses and examinations being:

- Junior Draftsman to Draftsman Gr. 1 (1 course)
- Draftsman Gr. 1 to Draftsman Gr. 2 (2 courses)
- Technician 1 to Technician 2, Surveys (2 examinations)
- Technician 2 to Technician 3, Surveys (2 courses)
- Technician 3 to Surveys to Technician 1, Eng.. Surveys (1 course)

## HEAD OFFICE DRAFTING

The following work was completed during the year:

Existing highway plans were kept up-to-date by the addition of 965 land plans, registered sub-divisions, annexations and property requests.

Numerous additions, received from Districts for updating plans in regard to building permits, and underground utilities, were plotted and traced.

A total of 13 profiles were updated by adding approved grades per construction alterations.



A total of eight Vertical Control verification and route sketches were prepared.

Also a total of five Horizontal Control routes were processed by this group.

#### STRIP PLAN GROUP

The Engineering Surveys Division has on file a Strip Plan for 149 King's Highways, 169 Secondary Highways and eight Tertiary Roads in Ontario, as well as special strip plans for the Kitchener-Waterloo and Lakehead Expressways, making a total of 328 Strip Plan linens.

During the year:

3 new Strip Plans were prepared.

31 Strip Plans were retraced due to major revisions and numerous additions, and deterioration through usage.

140 Strip Plans acquired sufficient new information for updating.

This year a new column, showing all Provincial Electoral Districts by name and number was added to the Strip Plans.

Prints of Strip Plans are supplied on a regular basis to 71 offices throughout the Department. During the year some 7,200 individual prints were issued.

In addition to the above:

50 miscellaneous charts and graphs were plotted and traced for the Division this year.

Special maps showing D.H.O. Precise B.M.'s as well as Canadian Geodetic B.M.'s are revised periodically and prints issued to Regional offices concerned.

Three Militia Map overlays, suitable for mounting on our Road Maps are maintained and updated periodically, made to cover the 1:25,000 and the 1:50,000, 2, 4 and 8 mile maps for the southern and northern sections of the Province.

#### SOUTHWESTERN REGION

	SURVEY	PLAN	BRIDGE SITES		RAILWAY CROSSINGS	
	MILEAGE	MILEAGE	SURVEYS	PLANS	SURVEYS	PLANS
Dist. No. 1.....	17.3	38.7	4	4	1	3
Dist. No. 2.....	52.5	78.0	—	3	2	1
Dist. No. 3.....	55.9	52.7	4	3	3	2
Dist. No. 4.....	3.5	14.7	—	18	—	—
Dist. No. 5.....	66.9	90.6	5	7	4	6
Dist. No. 8.....	—	6.7	—	—	—	—
	196.1	281.4	13	35	10	12

In addition to above:

52 miles of Original Cross-Sections were taken and 7 miles were plotted.

103 miles of Preliminary Cross-Sections were taken and 46 miles were plotted.

31 miles of Resurfacing Cross-Sections were taken.

46 miles of Photo Control was set.

45 miles of photo plan field checking was carried out.

18 miles of Property Owners were obtained for Photogrammetry.

17 Patrol Yard surveys were taken and 9 Patrol Yard plans were prepared.

37 Railway Site Surveys were taken for Program Inventory.  
15 miles of staking for Soils was set.  
4 Bore Hole sites were tied in for the Materials and Testing Section.  
24 miles of compass lines were run.  
Existing highway plans were kept-up-to-date by the addition of 635 Land Plans, deeds, registered sub-divisions, annexations, property requests and building permits.  
Two field crews from this Region assisted the Central Region for nine months.

CENTRAL REGION

	SURVEY	PLAN	BRIDGE SITES		RAILWAY CROSSINGS	
	MILEAGE	MILEAGE	SURVEYS	PLANS	SURVEYS	PLANS
Dist. No. 4.....	92	151	26	2	11	3
Dist. No. 6.....	106	112	11	13	2	4
Dist. No. 7.....	145	168	4	7	1	3
	343	431	41	22	14	10

In addition to the above:

52 miles of Original Cross-Sections were taken.  
50 miles of Preliminary Cross-Sections were taken  
99 miles of Resurfacing Cross-Sections were taken.  
50 miles of Photo Plan Field Checking was carried out.  
5 miles of Property Owners were obtained for Photogrammetry.  
7 Patrol Yard Surveys were taken and 3 Patrol Yard Plans were prepared.  
5 Safety Rest Area surveys were taken, 1 Safety Rest Area was prepared.  
18 Interchange surveys were taken.  
39 miles of staking for Soils was set.  
6 Bore Hole sites were tied in for the Materials and Testing Section.  
187 man days were spent preparing miscellaneous plans.  
4 Energy Board Sites were taken and 6 Energy Board Plans were prepared.

EASTERN REGION

	SURVEY	PLAN	BRIDGE SITES		RAILWAY CROSSINGS	
	MILEAGE	MILEAGE	SURVEYS	PLANS	SURVEYS	PLANS
Dist. No. 8.....	147	125	2	6	2	4
Dist. No. 9.....	144	99	13	9	2	1
Dist. No. 10.....	117	74	5	2	2	3
	408	298	20	17	6	8

In addition to above:

105 miles of Original Cross-Sections were taken.  
28 miles of Preliminary Cross-Sections were taken, and 10 miles were plotted.  
27 miles of Resurfacing Sections were taken and 0.5 miles were plotted.  
11 miles of Property Owners were obtained for Photogrammetry.

11 Patrol Yard Surveys were taken and 9 Patrol Yard Plans were prepared.

1 Railway Site Survey and 7 Structure Site Surveys were taken for Program Inventory.

9 miles of staking for Soils was set.

10 Bore Hole Sites were tied in for the Materials and Testing Section.

Existing Highway Plans were kept-up-to-date by the addition of 738 Land Plans, deeds, registered sub-divisions, grade revisions, annexations, highway number changes, property requests — as well as six as-constructed B.K. drawings being updated thus allowing the removal of 32 Outdated Plan linens from file.

## NORTHERN REGION

	SURVEY	PLAN	BRIDGE SITES		RAILWAY CROSSINGS	
	MILEAGE	MILEAGE	SURVEYS	PLANS	SURVEYS	PLANS
Dist. No. 11.....	67	58	6	6	2	1
Dist. No. 13.....	17	20	2	1	—	—
Dist. No. 14.....	67	66	9	2	—	—
Dist. No. 16.....	5	—	—	—	—	—
Dist. No. 17.....	47	90	4	5	5	4
Dist. No. 18.....	10	27	1	—	1	—
	213	261	22	14	8	5

In addition to above:

2 Energy Board Surveys were carried out.

66 miles of Original Cross-Sections were taken.

78 miles of Preliminary Cross-Sections were taken.

22 miles of Resurfacing Sections were taken.

76 miles of Photo Control was set.

7 miles of Photo Plan Field Checking was carried out.

13 Patrol Yard Surveys were taken and 10 Patrol Yard Plans were prepared.

2 District Complex Sites were taken.

2 District and Region Office Site Plans were prepared.

2 Railway Site Surveys and 1 Structure Site were taken for Program Inventory.

17 miles of staking for Soils was set.

2 Bore Hole Sites were tied in for the Materials and Testing Section.

9 miles of Compass Lines were run.

11 miles of miscellaneous survey information was taken for Road Design.

Existing Highway Plans were kept-up-to-date by the addition of some 835 Land Plans, deeds, registered sub-divisions, building permits, property requisitions and highway number changes.

## ELECTRONIC COMPUTING BRANCH

A. E. Goodwin, P.Eng., Director

Fiscal year 1967-68 may be most accurately termed a year of planning and transition for the Electronic Computing Branch. After an examination of current and anticipated operations, it was decided to replace the 7044, 1460, and 1401 computer systems with an IBM System/360 Model 65. This third-generation equipment will immediately provide more and speedier machine access to all users as well as permitting future implementation of teleprocessing and graphic displays. The bulk of the branch's effort this year has naturally been devoted to preparing for the installation of the /360 (expected to take place in April, 1968) and altering the entire ECB operation to run under the new system, with particular attention being given to the conversion of the program library.

In summary the branch this year has concentrated on expanding and improving its services to both DHO and outside users by undertaking a changeover to the new, advanced System/360 Model 65.

## DESIGN BRANCH

- Geometric Analysis of Highway Interchanges
- Analysis of Continuous Monolithic Curved Bridges
- Bridge Inventory
- Continuous Bridge Design and Analysis
- Backwater Curve Analysis
- Analysis of Continuous Frames with Inclined Legs
- Analysis of Continuous Bridges Constructed of Precast Members
- Reinforcing Steel Bar Schedules
- Bridge Concrete Qualities
- Preliminary Bridge Cost Estimating
- Bridge Drawing Status Report
- Three-Dimensional Analytical Triangulation
- Digitized Magnetic Tape Translator

## FINANCIAL BRANCH

- Budget Office Reports — modified and converted
- Expenditure Detail Package — Daily only
- Unclassified Payroll — modified and converted
- Cash Disbursement Account No. 1 — modified and converted

## OPERATIONS BRANCH

- Concrete Quality Control — Accelerated Strength Tests
- Geometric Analysis of Highway Interchanges for Construction Layout

## PLANNING BRANCH

- Perspective Views — Advanced Pictorial Display Study
- Construction Program Integrated Statistical Files — Yearly Lists
- Transportation Studies Program Package — expanded



Traffic Assignment Graph Plot — expanded  
Multi-Path Assignment Program — expanded  
Generalized O/D Survey Analysis — expanded

#### RESEARCH BRANCH

Maintenance Management Reporting Program Package  
Truck Weight Statistical Analysis — frequency table added  
Maintenance Management Resource Allocation

#### SERVICES BRANCH

High-Speed Data Processing for Fleet Management  
Equipment System

#### MANAGEMENT

Ontario Government Teleprocessing Study  
1050 Data Communication System  
Management Information Systems (pre-engineering)  
Predicting Expenditures on Construction Projects  
Code Standards on Construction Items  
Staging Analysis of Large Complex Engineering Projects Through Critical Path  
Methods  
Multivariate Analysis Program Package

#### PERSONNEL BRANCH

Employee Merit Increase Program — converted

#### DEPARTMENT OF CIVIL SERVICE

Pay Research Data Analysis — 1966 data  
Development of a Proposal for a Personnel Resources System

#### DEPARTMENT OF ATTORNEY-GENERAL

Labour Disputes Inquiry

#### DEPARTMENT OF LANDS AND FORESTS

Timber Scaling and Invoice Program — extended to 18 districts with tree-length  
scaling

#### DEPARTMENT OF AGRICULTURE

Winter Wheat Analysis

#### ONTARIO PROVINCIAL POLICE

OPP Listings Program — converted

DEPARTMENT OF ENERGY AND RESOURCES MANAGEMENT

Ontario Well Data System — modified

TREASURY DEPARTMENT

Carter Report Analysis

SIGNIFICANT APPLICATIONS IN PRODUCTION FOR FISCAL YEAR 1967-68

JOB DESCRIPTION	MILES	JOBS
Bridge Calculation — all types.....		5,960
Land Survey Calculation — all types.....		775
Geometrics — Azimuth Distance and Ramp Coordinates .....		237
Progress Payment Certificates.....		103
Staff Resources Inventory Reports.....		51
Critical Path Reports.....		935
Photogrammetry Reports and Plots.....		342
Road Design Quantity Calculation.....	1,051	87
Road Design Elevation and Alignment Reports .....	289	63
Road Design Cross Section Plots.....	333	66
Earth Quantity Calculation — Payment.....	15	3
Operations Cross Section Plots .....	441	79
Office Services Inventory Reports.....		561
Slope Stability Design.....		510
Equipment Analysis and Reports.....		54
Planning and Project Scheduling Reports .....		393
Transporation Study and Origin Destination Surveys.....		561
Hourly Traffic Counts .....		724
Personnel Reports.....		628
Accounts — various.....		1,742
Traffic Characteristics Reports .....		44
Employee Suggestion Program Reports.....		73
Maintenance Management Reports.....		22
Estimating Division Reports.....		7
Concrete Quality Analysis Reports.....		16

## FINANCIAL BRANCH

H. M. Adamson, Comptroller

The following statements outline the expenditure and cash receipts of the Department of Highways, Ontario, for the year ended March 31, 1968.

- I. Ordinary Expenditure
- II. Capital Payments, including Expenditure Summary
- III. Trans-Canada Highway
- IV. The "Queensway" — Ottawa
- V. Receipts
- VI. Burlington Bay Skyway
- VII. Garden City Skyway
- VIII. Comparison of Average Unit Prices Paid on Contracts

### TOTAL EXPENDITURE

The "Expenditure Summary" (Statement II) sets out total ordinary expenditure and capital payments at \$423,026,272. The following is a comparison of total expenditure with previous years.

1963 .....	\$251,152,745	1966 .....	\$336,146,806
1964 .....	280,476,989	1967 .....	390,567,594
1965 .....	299,036,127	1968 .....	423,026,272

### TRANS-CANADA HIGHWAY AGREEMENT

Expenditure of the Department under this agreement is shown in Statement III in the amount of .....	\$247,493,881
With funds recovered or recoverable of .....	121,129,862
And a net cost to the Department of .....	\$126,364,019

### RECOVERABLE EXPENDITURE

Within the fiscal year the Department recovered \$16,913,000, made up as follows:

Trans-Canada Highway .....	\$ 3,805,292
Ottawa Queensway; Government of Canada .....	\$ 258,246
City of Ottawa .....	1,500,000
	<hr/>
Railway Bridges .....	1,758,246
	1,984,947
	<hr/>
Total of items detailed in Statement II .....	\$ 7,548,485
Federal-Department of Transport .....	110,636
Federal-Provincial Resources Roads .....	238,676
Ontario Department of Mines .....	230,218
Sundry items credited to expenditure or to revenue .....	8,784,985
	<hr/>
	\$ 16,913,000

PRE-QUALIFICATION OF CONTRACTORS

There were 183 capital contracts awarded during the year, of which 132, representing 72.1% of the total of 98.3% of the tender value, required the pre-qualification of contractors. Of the 150 ordinary contracts awarded during the year 75, or 50%, representing 84.9% of the tender value, required pre-qualification. An average of 5.4 bids was received on pre-qualified contracts as compared with 3.7 bids on unqualified contracts.

INDEXES OF TENDER PRICES PAID ON ROAD CONTRACTS AND FOR MATERIALS

To illustrate the trend of prices paid this year in relation to previous years, the following charts are submitted showing:

- Index of Tender Prices Paid on Road Contracts (Chart I).
- Index of Tender and Material Prices (Chart II).

CHART I  
TENDER PRICE INDEXES

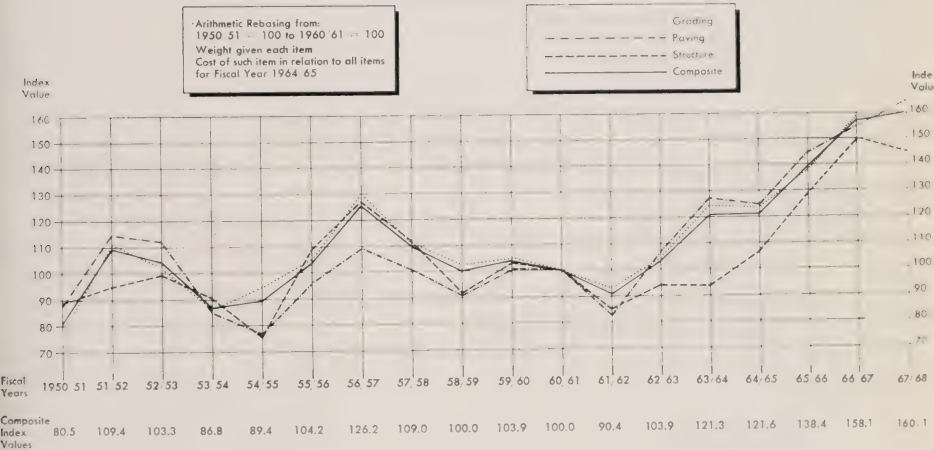
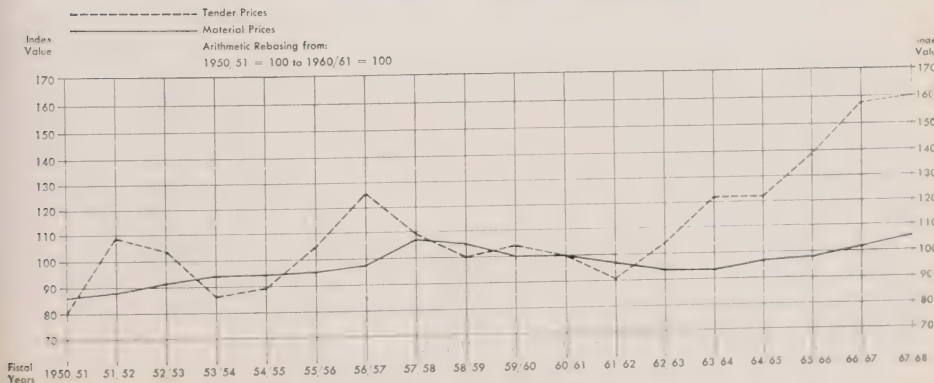


CHART II  
COMPARISON OF TENDER AND MATERIAL PRICE INDEXES





## STATEMENT I

**Ordinary Expenditure**  
**For the Fiscal Years ending March 31, 1968 and March 31, 1967**

	YEAR ENDING MARCH 31, 1968	YEAR ENDING MARCH 31, 1967
Maintenance of King's Highways and		
Secondary Highways —		
Winter Maintenance —		
Contract and day labour .....	\$ 23,791,286	\$ 24,649,683
Equipment Operating costs due to standby (60%) .....	1,032,299	516,430
Summer Maintenance —		
Patrol costs .....	14,724,875	13,709,504
Gravel Crushing — contract and day labour .....	1,268,218	1,056,727
Prime — contract and day labour..	515,268	582,436
Hot Mix Patching — contract and day labour .....	1,486,396	1,437,074
Surface treatment — contract and day labour .....	525,600	435,557
Mulch — day labour .....	202,356	191,809
Major bridge repairs .....	315,932	388,473
Equipment operating costs due to standby (40%) .....	688,199	344,287
Operation of ferries .....	832,627	757,656
Flood and other emergencies .....	74,790	31,059
District Office Overheads, including engineering, warehouse and municipal .....	10,019,189	9,952,391
Expenditures recovered but credited to revenue .....	299,216	263,124
Increase (decrease) in inventories ....	107,968	198,289
	\$ 55,884,219	\$ 54,514,499
Repaving of present roads .....	2,550,254	2,154,792
Maintenance of development roads .....	288,487	353,382
Maintenance of roads in Unincorporated Townships in Northern Ontario .....	1,049,587	987,515
Building repairs .....	392,403	378,905
	\$ 60,164,950	\$ 58,389,093
Total (see Appendices 1 and 7, for distribution of above expenditures by counties, roads, etc.) .....		
General Operating Expenditures —		
Purchase of new trucks, tractors, plows and other road equipment .....	\$ 3,549,992	\$ 3,349,993
Printing and Stationery .....	1,066,512	1,011,076
Office Furniture and Equipment ....	348,890	336,226
Workmen's compensation .....	270,266	296,644
Insurance and Claims .....	349,947	403,658
Unemployment Insurance .....	121,997	155,422
Maintenance of Buildings and area office rentals .....	224,691	199,120
Teletype rentals .....	74,084	80,497
Staff training .....	75,622	51,586
Recoverable expenditures (net) ....	(14,837)	51,105
Central stores, increase (decrease) in stock .....	19,415	(4,827)
	\$ 6,086,579	\$ 5,930,500

## STATEMENT I (Cont'd)

	YEAR ENDING MARCH 31, 1968	YEAR ENDING MARCH 31, 1967	
Head Office —			
General administrative and operating			
staff salaries .....	\$ 6,156,391	\$ 5,721,775	
Travelling expenses .....	316,799	306,515	
Electronic section salaries,			
expenses and equipment rentals .....	1,721,529	1,458,105	
Sundry .....	1,217,467	1,125,664	
	<u>          </u>	<u>          </u>	\$ 8,612,059
Roads Publicity, etc. ....		201,850	224,762
Burlington Bay Skyway toll			
collection costs .....	\$ 281,143	\$ 261,711	
Garden City Skyway toll collection			
costs .....	209,097	189,121	
	<u>          </u>	<u>          </u>	\$ 450,832
GO Transit .....		3,629,533	324,820
Municipal Subsidies —			
County roads .....	\$ 7,789,846	\$ 7,430,461	
Township roads .....	16,781,535	18,718,975	
Cities, towns and villages .....	21,043,374	15,805,489	
	<u>          </u>	<u>          </u>	\$ 41,954,925
<b>TOTAL ORDINARY EXPENDITURES</b>	<b>\$125,600,093</b>		<b>\$115,886,991</b>

## PER PUBLIC ACCOUNTS

Total Ordinary Expenditures per Public		
Accounts .....	\$125,600,093	\$115,886,991

## STATEMENT II

**Capital Payments**  
**For the Fiscal Years ending March 31, 1968 and March 31, 1967**

	YEAR ENDING MARCH 31, 1968	YEAR ENDING MARCH 31, 1967	
Construction of King's Highways and			
Secondary Highways			
Payments to Contractors .....	\$103,826,194	\$ 89,749,093	
Materials and sundry contract ex-			
penditures .....	40,510,939	41,606,610	
Engineering .....	14,740,813	13,856,853	
	<u>          </u>	<u>          </u>	\$145,212,556
Construction of Development Roads ...		19,699,799	17,980,722
Construction of roads in Unincorpor-			
ated Townships in Northern Ontario		665,300	544,786
Expenditures allocated to the above			
roads —			
Property purchase .....	\$ 20,996,755	\$ 14,498,970	
Land Surveys .....	2,461,872	2,170,640	
Planning .....	1,609,176	1,228,689	
Design .....	7,163,901	6,097,706	
Buildings .....	1,924,034	1,195,733	
	<u>          </u>	<u>          </u>	\$ 25,191,738
	<u>          </u>	<u>          </u>	\$ 34,155,738

## STATEMENT II (Cont'd)

	YEAR ENDING MARCH 31, 1968	YEAR ENDING MARCH 31, 1967
Total (see Appendices 1 and 7 for distribution of above expenditure by counties, roads, etc.) .....	\$213,598,783	\$188,929,802
Expenditures of Head Office branches unallocated and not included above:		
Right of Way Division .....	\$ 1,320,885	\$ 1,161,522
Land Surveys .....	1,923,779	1,778,132
Planning .....	3,310,523	3,192,978
Design .....	2,747,184	2,383,126
Buildings .....	15,167	20,000
Materials and Testing .....	3,613,114	3,371,116
Engineering Audit .....	935,205	846,846
Increase (decrease) in Bailey Bridges and steel inventories ....	38,850	(24,400)
Net recoverable expenditures debit (credit) .....	(5,472,743)	(6,661,291)
Sundry .....	506,066	393,728
GO Transit .....	\$ 8,938,030	\$ 6,461,757
Municipal Subsidies:	\$ 5,085,048	\$ 9,282,421
County Roads .....	\$ 20,229,456	\$ 17,232,551
Township Roads .....	17,051,707	20,652,562
Cities, Town and Villages .....	40,071,640	37,546,489
	\$ 77,352,803	\$ 75,431,602
TOTAL GROSS CAPITAL PAYMENTS ON CONSTRUCTION ....	\$304,974,664	\$280,105,582
Less Recoveries:		
Trans-Canada Highway .....	\$ 3,805,292	\$ 2,290,907
Ottawa Queensway		
Government of Canada .....	258,246	609,662
City of Ottawa .....	1,500,000	500,000
Railway Bridges .....	1,984,947	2,024,410
	\$ 7,548,485	\$ 5,424,979
NET CAPITAL PAYMENTS PER PUBLIC ACCOUNTS .....	\$297,426,179	\$274,680,603

## EXPENDITURE SUMMARY

Ordinary expenditures .....	\$125,600,093	\$115,886,991
Capital payments, net .....	297,426,179	274,680,603
	\$423,026,272	\$390,567,594
TOTALS .....	\$423,026,272	\$390,567,594

### STATEMENT III

#### Trans-Canada Highway

The following statement sets out expenditure and amounts recoverable on the Trans-Canada Highway from the inception of the agreement with the Government of Canada on April 24, 1950.

	REFUNDABLE BY GOVERNMENT OF CANADA	EXPENDED BY DEPARTMENT
Refunded by the Government of Canada on account of work performed prior to April 24, 1950 .....	\$ 1,569,640	\$ .....
Year ending March 31, 1951 .....	2,749,329	7,043,559
" " " 1952 .....	3,453,866	8,242,801
" " " 1953 .....	4,103,753	11,746,130
" " " 1954 .....	2,486,860	9,686,452
" " " 1955 .....	6,274,487	5,675,343
" " " 1956 .....	3,365,959	9,602,299
" " " 1957 .....	4,855,053	13,996,280
" " " 1958 .....	12,381,361	20,683,306
" " " 1959 .....	15,803,757	27,995,777
" " " 1960 .....	17,662,423	28,412,552
" " " 1961 .....	16,500,840	24,786,757
" " " 1962 .....	11,623,549	16,168,477
" " " 1963 .....	3,958,997	8,164,528
" " " 1964 .....	2,990,783	6,784,073
" " " 1965 .....	2,617,937	5,591,696
" " " 1966 .....	2,536,827	6,432,938
" " " 1967 .....	2,290,907	7,329,474
" " " 1968 .....	3,805,292	14,884,817
Expenditure by Department for property and other non-recoverable expenditures .....		14,266,622
TOTAL TO MARCH 31, 1968 .....	\$121,031,620	\$247,493,881
Further claims to be submitted based on expenditures to March 31, 1968		
Claim No. 180 .....	28,242	
Claim No. 181 .....	70,000	
TOTAL REFUNDS BY GOVERNMENT OF CANADA .....		\$121,129,862
NET ESTIMATED COST TO MARCH 31, 1968 .....		\$126,364,019

### STATEMENT IV

#### The Queensway — Ottawa

The following statement sets out expenditures and amounts recoverable on the "Queensway" - Ottawa since the signing of the agreement with the Government of Canada, the Federal District Commission and the City of Ottawa, on March 19, 1957.

#### EXPENDED BY DEPARTMENT:

Year ending March 31, 1958 .....	\$ 563,956
" " " 1959 .....	1,720,076
" " " 1960 .....	3,860,475
" " " 1961 .....	5,723,245
" " " 1962 .....	3,889,962
" " " 1963 .....	3,778,739
" " " 1964 .....	5,215,154
" " " 1965 .....	3,411,781



## STATEMENT IV (Cont'd)

"	"	"	1966 .....	1,904,433	
"	"	"	1967 .....	2,706,434	
"	"	"	1968 .....	558,884	
				<hr/>	\$33,333,139

## RECOVERED FROM FEDERAL GOVERNMENT:

Year ending March 31, 1958 .....	\$	204,500
" " " 1959 .....		109,221
" " " 1960 .....		773,681
" " " 1961 .....		1,367,729
" " " 1962 .....		1,380,118
" " " 1963 .....		951,729
" " " 1964 .....		1,211,642
" " " 1965 .....		1,071,872
" " " 1966 .....		483,000
" " " 1967 .....		609,662
" " " 1968 .....		258,246

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\$8,421,400Further amounts to be recovered, based on expenditures to  
March 31, 1968 .....

1,033

Total recovered from Federal Government .....	\$	8,422,433
Recovered from the City of Ottawa .....		6,416,831

## AMOUNTS TO BE RECOVERED FROM:

The City of Ottawa .....	\$873,641	
Federal Government under T.C.H. Contracts .....	953,664	1,827,305

TOTAL RECOVERIES ..... \$16,666,569

NET ESTIMATED COST TO MARCH 31, 1968 ..... \$16,666,570

## STATEMENT V

Statement of Receipts  
For the Fiscal Years ending March 31, 1968 and March 31, 1967

	YEAR ENDING	
	MARCH 31, 1968	MARCH 31, 1967
Sale of land and buildings .....	\$ 301,278	\$ 198,483
Property rentals .....	1,645,788	1,231,986
Sale of services and materials .....	625,320	611,286
Permits — sign and housemoving .....	75,298	77,068
Gas line franchises .....	9,973	9,095
Burlington Bay Skyway .....	1,063,665	1,073,864
Garden City Skyway .....	692,846	711,541
Niagara Falls Parking .....	18,108	—
Miscellaneous .....	162,001	166,296
TOTAL RECEIPTS .....	<hr/> \$4,594,277	<hr/> \$4,079,619
Distribution:		
Ordinary revenue .....	\$4,232,378	\$3,793,506
Capital receipts .....	361,899	286,113
	<hr/> \$4,594,277	<hr/> \$4,079,619

## STATEMENT VI

## Burlington Bay Skyway

Comparative Statement of Toll Collections, Revenues and Expenditures  
For the Fiscal Years ending March 31, 1968 and March 31, 1967

REVENUES:	YEAR ENDING MARCH 31, 1968	YEAR ENDING MARCH 31, 1967	INCREASE (DECREASE)	PERCENTAGE
Toll Revenue Earned:				
Class I vehicles .....	\$ 760,226	\$ 770,527	\$ (10,301)	(1.34)
Class II vehicles .....	87,536	82,373	5,163	6.27
Class III vehicles .....	174,256	169,087	5,169	3.06
Total Revenue Earned .....	\$1,022,018	\$1,021,987	\$ 31	—
Plus—Tickets and tokens sold but not presented and other net adjustments .....	35,000	45,084	(10,084)	(22.37)
	\$1,057,018	\$1,067,071	\$ (10,053)	(0.94)
Add: Premium U.S. Funds .....	6,647	6,793	(146)	(2.15)
Total Revenue .....	\$1,063,665	\$1,073,864	\$ (10,199)	(0.95)
DIRECT EXPENDITURES:				
Toll operating staff salaries ....	\$ 242,518	\$ 228,126	\$ 14,392	6.31
Travelling Expenses .....	3,346	1,301	2,045	—
Office Expenses .....	9,687	10,757	(1,070)	(9.95)
Light heat, water, telephone, etc. ....	9,956	5,667	4,289	75.68
Maintenance of building .....	1,969	3,046	(1,077)	(35.36)
Maintenance of equipment ....	13,667	9,150	4,517	49.37
Rental of equipment .....	—	3,664	(3,664)	—
	\$ 281,143	\$ 261,711	\$ 19,432	7.42
Excess of Revenue over Expenditure .....	\$ 782,522	\$ 812,153	\$ (29,631)	(3.65)
TRAFFIC:				
Class I vehicles .....	9,026,128	9,220,021	(193,893)	(2.10)
Class II vehicles .....	526,784	499,508	27,276	5.46
Class III vehicles .....	1,030,430	990,219	40,211	4.06
TOTAL .....	10,583,342	10,709,748	(126,406)	(1.18)

## STATEMENT VII

## Garden City Skyway

Comparative Statement of Toll Collections, Revenues and Expenditures  
For the Fiscal Years ending March 31, 1968 and March 31, 1967

	YEAR ENDING MARCH 31, 1968	YEAR ENDING MARCH 31, 1967	INCREASE (DECREASE)	PERCENTAGE
REVENUES:				
Toll Revenue Earned:				
Class I vehicles .....	\$ 555,833	\$ 584,004	\$ (28,171)	(4.82)
Class II vehicles .....	47,821	45,568	2,253	4.94
Class III vehicles .....	73,948	70,607	3,341	4.73
Total Revenue Earned .....	\$ 677,602	\$ 700,179	\$ (22,577)	(3.22)
Plus—Tickets and tokens sold but not presented and other net adjustments .....	3,058	cr. 1,245	4,303	—
	\$ 680,660	\$ 698,934	\$ (18,274)	(2.61)
Add: Premium U.S. Funds .....	12,186	12,607	(421)	(3.34)
Total Revenue .....	\$ 692,846	\$ 711,541	\$ (18,695)	(2.63)
DIRECT EXPENDITURES:				
Toll operating staff salaries ....	\$ 185,543	\$ 170,061	\$ 15,482	9.10
Travelling Expenses .....	745	535	210	39.25
Office Expenses .....	6,428	3,152	3,276	103.93
Light, heat, water, telephone, etc. ....	8,543	7,921	622	7.85
Maintenance of building .....	3,269	3,710	(441)	(11.89)
Maintenance of equipment ....	4,569	3,741	828	22.13
	\$ 209,097	\$ 189,120	\$ 19,977	10.56
Excess of Revenue over Expenditure .....	\$ 483,749	\$ 522,421	\$ (38,672)	(7.40)
TRAFFIC:				
Class I vehicles .....	5,901,902	6,190,755	(288,853)	(4.67)
Class II vehicles .....	253,034	248,357	4,677	1.88
Class III vehicles .....	410,850	393,384	17,466	4.44
TOTAL .....	6,565,786	6,832,496	(266,710)	(3.90)
TOLL RATES:				
			CASH	TICKETS
Class I vehicles, passenger vehicles and trucks having not more than two axles and weight-carrying capacity of less than one ton .....			.15	.05
Class II vehicles, passenger vehicles with trailers and trucks having not more than two axles and a weight-carrying capacity of one ton or more ....			.25	.10
Class III vehicles, trucks with three axles or more and public vehicles .....			.45	.15

**STATEMENT VIII**  
**Comparison of Unit Prices on Contracts for Use in Tender Price Index**  
**For Period April 1, 1950 to March 31, 1968**

Fiscal Year	Clearing Acre	Grubbing Acre	Earth Exca- vation Cu. Yd.	Earth Exca- vation Grading Cu. Yd.	Earth Exca- vation Borrow Cu. Yd.	Rock Exca- vation Cu. Yd.	Gran- ular "A" Ton	Gran- ular "B" Ton	5/8" Crushed Gravel "A" Ton	5/8" Crushed Gravel "B" Ton	Sand Cushion Ton	Earth Compac- tion Cu. Yd.	Compac- tion Equip- ment Hour	Water for Compac- tion M. Gal.	Concrete in Culverts Cu. Yd.
1950/51	\$ 96.78	\$ 130.98	\$ .36	\$ —	\$ —	\$ 1.42	\$ .87	\$ .90	\$ 1.06	\$ .91	\$ .56	\$ .026	\$ —	\$ 6.19	\$ 20.65
1951/52	148.84	151.20	.54	—	—	1.78	1.51	1.32	1.43	1.03	.66	.032	—	7.50	26.57
1952/53	125.88	170.20	.39	—	—	1.64	1.38	1.40	1.43	1.30	.77	.029	—	6.74	22.22
1953/54	127.63	144.39	.37	—	—	1.27	1.17	1.02	1.34	1.02	.59	.027	—	6.24	23.14
1954/55	132.50	153.49	.40	—	—	1.73	1.15	1.19	1.30	1.13	.68	.027	—	6.05	22.06
1955/56	184.15	213.20	.44	—	—	1.81	1.28	1.46	1.34	1.28	.62	.035	—	5.69	26.13
1956/57	235.79	251.10	.60	—	—	2.43	1.48	1.62	1.41	1.38	.95	.045	—	6.44	32.11
1957/58	203.59	257.52	.45	—	—	2.14	1.34	1.30	1.33	1.33	.77	.044	—	5.39	27.56
1958/59	190.61	235.17	.40	—	—	2.08	1.26	1.36	1.18	1.17	.69	.042	—	4.48	25.05
1959/60	163.30	200.55	.41	—	—	2.01	1.35	1.29	1.16	1.28	.77	—	6.44	4.30	26.09
1960/61	162.63	207.19	.43	—	—	1.82	1.18	1.11	1.53	1.27	.68	—	6.65	3.75	24.62
1961/62	162.19	188.27	.36	—	—	1.77	1.21	1.08	1.07	1.13	.67	—	8.24	3.21	21.13
1962/63	201.68	197.17	.45	—	—	1.85	1.25	1.30	1.20	1.25	.69	—	9.50	3.25	25.79
1963/64	270.43	250.92	.57	—	—	2.22	1.49	1.54	1.41	1.36	.72	—	9.50	3.77	28.96
1964/65	285.29	299.10	—	.57	.61	2.45	1.39	1.19	1.48	1.48	.83	—	9.50	3.51	28.33
R 1965/66	353.87	343.89	—	.67	.70	2.59	1.66	1.39	1.13	1.24	1.04	—	10.85	4.21	40.30
1966/67	490.98	444.98	—	.76	.83	3.19	1.73	1.51	1.33	1.84	1.03	—	10.83	4.76	41.12
1967/68	519.22	481.98	—	.72	.87	3.09	1.75	1.32	1.57	1.69	1.09	—	12.12	4.91	44.32



**STATEMENT VIII (cont'd)**  
**Comparison of Unit Prices on Contracts for Use in Tender Price Index**  
**For Period April 1, 1950 to March 31, 1968**

Fiscal Year	Placing Concrete Pipe 12" Lin. Ft.	Placing C.S.P. 18" Lin. Ft.	Concrete Base Sq. Yd.	Concrete Pavement Sq. Yd.	Bituminous Hot Mix Top Course Ton	Bituminous Hot Mix Base Course Ton	Structural Steel Fabrication Ton	Structural Steel Erection Ton	Structural Steel Fabrication Supply and Erection Ton	Structural Steel Delivery Ton	Concrete in Foundations Cu. Yd.	Concrete in Structures Cu. Yd.
1950/51	\$ —	\$ —	\$ —	\$ —	\$ 3.19	\$ 3.06	\$ 223.41	\$ 75.09	\$ —	\$ —	\$ —	\$ —
1951/52	—	—	—	—	4.17	3.99	239.72	76.84	—	—	—	—
1952/53	—	—	—	—	3.92	4.00	256.02	78.58	—	—	—	—
1953/54	—	—	—	—	3.08	3.03	216.76	60.27	—	—	—	—
1954/55	—	—	—	—	2.68	2.75	194.46	40.04	—	—	—	—
1955/56	—	—	—	—	4.03	3.12	281.23	96.28	—	—	—	—
1956/57	—	—	—	—	4.51	3.59	354.80	119.12	—	—	—	—
1957/58	—	—	—	—	4.17	3.28	277.96	87.27	—	—	—	—
1958/59	—	—	—	—	3.93	2.89	237.93	59.50	—	—	—	—
1959/60	—	—	—	—	4.31	3.21	246.28	63.69	—	—	—	—
1960/61	—	—	—	—	3.93	3.37	277.75	75.32	—	—	—	—
1961/62	—	—	—	—	3.60	2.62	233.71	39.78	—	—	—	—
1962/63	—	—	—	—	4.40	3.52	267.18	58.48	—	—	—	—
1963/64	—	—	—	—	4.99	4.30	259.06	50.86	—	—	—	—
1964/65	.98	.67	2.97	2.69	4.51	4.37	—	—	322.64	9.03	26.53	52.41
R1965/66	1.69	.83	3.38	3.26	4.88	5.02	—	—	405.63	4.48	33.35	61.32
1966/67	1.74	.99	3.83	3.33	5.69	5.48	—	—	498.53	10.12	35.03	67.55
1967/68	1.85	1.21	4.39	4.17	5.56	5.33	—	—	426.44	14.18	33.67	73.05

R: Major revision — prices published are adjusted to maintain comparability.

## LEGAL BRANCH

**D. A. Crosbie, Director**

### SOLICITORS

The Director and four solicitors are located in the main office of the Department at Downsview to provide legal services and advice to the various branches of the Department. There is a regional solicitor in the Toronto regional office to provide legal services and advice to personnel of that office.

### INSURANCE AND CLAIMS SECTION

This section deals with all matters pertaining to insurance coverage carried by this and other departments, and is also responsible for the handling, negotiating and settling of various types of claims. The section investigates and supervises the settlement of Workmen's Compensation third party claims where injuries occur to Government employees. There are other miscellaneous types of tortious claims which are also dealt with by this section.

### VOLUME OF CLAIMS AND INVESTIGATION

The volume of claims and their various categories for the fiscal year under review (with comparative figures for 1966-67) is as follows:

	1967-68	1966-67
Claims against Department — non-repair of highways.....	683	883
Claims against Department — miscellaneous liability.....	1,393	2,797
Claims by Department — for damage to Department property.....	6,831	6,040
Claims by Department — for personal injuries to employees.....	72	66
Number of accidents — involving government vehicles.....	895	884
<b>TOTALS</b> .....	<b>9,874</b>	<b>10,670</b>

The above figures do not include complaints on a variety of minor matters which were also investigated and resolved.

## OPERATIONS BRANCH

J. B. Wilkes, P.Eng., Director of Operations

### THE SIGN AND BUILDING PERMITS SECTION

	Applications Rec'd	Permits Issued
Building Permits .....	4,690	4,482
Entrance Permits .....	2,879	2,676
Encroachment Permits .....	992	952
Sign Permits .....	6,312	1,631
Sign Permit Renewals — 4,702		

NOTE: Licenses are issued according to the calendar year, January 1st to December 31st.

### FIELD ADVERTISING SIGN PERMITS

Fiscal Year, April 1st, 1967 to March 31st, 1968

Number of Field Advertising Sign Permits issued for fiscal year .....	4,883
Value of Field Advertising Sign Permits issued for fiscal year .....	\$58,075

NOTE: Permits are issued for the Calendar Year.

### FIELD ADVERTISING SIGNS

DISTRICT	NO. REC'D	NO. APP.	NO. REFUSED	NO. PENDING	AMT. REC'D
Chatham	250	250	—	—	\$ 2,900.00
London	367	367	—	—	4,220.00
Stratford	398	396	1	1	3,795.00
Hamilton	156	144	9	3	4,000.00
Owen Sound	527	513	12	2	5,490.00
Toronto	277	276	1	—	4,130.00
Port Hope	331	331	—	—	3,710.00
Kingston	313	312	1	—	3,080.00
Ottawa	228	226	2	—	4,740.00
Bancroft	222	222	—	—	1,520.00
Huntsville	433	427	6	—	4,250.00
North Bay	221	221	—	—	2,115.00
New Liskeard	175	175	—	—	1,545.00
Cochrane	83	83	—	—	805.00
Sudbury	221	216	5	—	2,560.00
Sault Ste. Marie	179	175	4	—	3,180.00
Fort William	263	263	—	—	3,160.00
Kenora	286	286	—	—	2,875.00
TOTALS	4,930	4,883	41	6	\$58,075.00

## VALUATION OF BUILDING PERMITS

DISTRICT	VALUE OF PERMITS ISSUED
Chatham .....	\$ 11,675,244
London .....	5,233,752
Stratford .....	5,391,945
Hamilton .....	42,460,000
Owen Sound .....	11,262,995
Toronto .....	64,433,118
Port Hope .....	4,474,842
Kingston .....	3,556,905
Ottawa .....	5,114,157
Bancroft .....	1,478,795
Huntsville .....	5,166,920
North Bay .....	2,862,707
New Liskeard .....	753,055
Cochrane .....	371,475
Sudbury .....	2,514,975
Sault Ste. Marie .....	1,031,050
Fort William .....	1,885,500
Kenora .....	1,659,555
<b>TOTAL</b> .....	<b>\$171,326,990</b>

## CONSTRUCTION DIVISION

**H. A. Tregaskes, P.Eng., Construction Engineer**

During the 1967-68 fiscal year construction work continued at the high rate of previous years and by the end of the year capital construction expenditures were very nearly at an all-time-high.

There was a heavy concentration of work on major projects which have been under way for some time, including the Toronto By-Pass section of the Macdonald-Cartier Freeway, the Thorold Tunnel and immediate highway approaches, Highway 403, and the new section of the Macdonald-Cartier Freeway (Highway 401), covering approximately 26 miles from Gananoque easterly to Crystal Beach.

Good progress was made on the Toronto By-Pass and it is expected that in the summer of 1968 the section from Kipling Avenue to Warden Avenue will be fully completed. Excellent progress was made on the Macdonald-Cartier Freeway east of Highway 137, with the result that the Gananoque-Crystal Beach stretch will be opened to public travel by mid fall of 1968.

Work on the Thorold Tunnel and new approaches covering several miles continued on schedule, with the opening expected in September, 1968.

The heavy work on Highway 403 from west of Aberdeen Avenue to Duff's Corners at Highways 2 and 53 progressed well.

The Quinte Skyway was opened to traffic in the late fall of 1967.

Major, intricate work on the Queen Elizabeth Way east and west of Highway 27 and on Highway 27 north and south of the Queen Elizabeth Way proceeded ahead of schedule.

The Kitchener-Waterloo Expressway work carried on with satisfactory progress.



A major interchange on the Ottawa Queensway at Blair Road was sufficiently completed by the year's end to be opened to traffic.

In the northern part of the Province construction progressed favourably.

On Highway 144, the new Sudbury-Timmins Highway, a very large amount of work was accomplished, particularly at the north end, where approximately 48 miles are now finished.

The Red Lake Road, Highway 105, was fully reconstructed for its entire length of 112 miles by mid-summer.

Good progress was made on the Lakehead Expressway, west of both Fort William and Port Arthur.

In addition to the above a very large amount of reconstruction work and new bridge construction in both southern and northern Ontario was carried out, greatly improving existing highways.

#### SOUTHWESTERN AREA

##### Chatham, London, Stratford and Owen Sound Districts

During 1967 further progress was made in the elimination of grade crossings on the Macdonald-Cartier Freeway. Seven underpasses were brought into use, two in Maidstone Township, two in Sandwich South Township and three in the London District. In addition, Interchange 18A was completed with only top course paving and trimming remaining to be done and Contracts for six new underpasses were awarded near the year's end. Between Interchange 4 and Interchange 8 west of Tilbury the Freeway was surfaced with a  $\frac{3}{4}$  inch dense graded bituminous hot mix material thus completing the resurfacing from Windsor to Tilbury. Bridge decks on existing structures on the Freeway between Windsor and Tilbury were stripped, repaired, waterproofed and resurfaced with a modified hot mix H.L. 1 incorporating asbestos fibre.

On Highway 3, reconstruction was completed from Port Crewe westerly to Stevenson Road. Six inches of deep asphalt was used over existing concrete, the first time the District has used this type of construction. Grading, Drainage, Granular Base and Paving at the intersection of Highway 24 in Simcoe, over a distance of 0.54 miles was finished.

Top course paving on Highway 4 from Highway 7 Southerly for 4.2 miles was carried out. Grading, drainage, granular base and hot mix paving was completed from 0.25 miles north of Exeter, northerly for 7.5 miles, as was the grading, drainage, granular base and paving work from Highway 6 in Durham Easterly for 2.5 miles. The reconstruction of Highway 4 from Macdonald-Cartier Freeway southerly to north of Talbotville was hindered by wet weather during the fall season. The Hannah Memorial Bridge over the Maitland River in Wingham was opened to traffic.

On Highway 7 at the intersection of County Road 17, 1.3 miles south of Parkhill, grading, granular base, and paving covering a distance of 0.72 miles, and also from 0.5 miles north of Stratford South limits, southerly for 9.5 miles, grading, granular base and hot mix paving was completed. The grading, drainage, granular base and hot mix paving work was finished from Stratford East limits to Shakespeare East limits. This reconstruction contract included curbs, gutter, sewers and pavement widening in the Village of Shakespeare. The contract for the St. Mary's diversion 11.07 miles was awarded late in the season and is expected to be completed in 1968.

Also expected to be finished in 1968 is a contract for grading, drainage, granular base and hot mix paving from 6.5 miles south of Stratford for 11.38 miles.

On Highway 9 from Orangeville westerly, 10.1 miles of hot mix paving was carried out. Work is well advanced at the intersection of Highway 9 and Highway 27 north of Schomberg, where a 2.5 mile diversion, including a new structure, is being built.

A large, double concrete box culvert was under construction on Highway 10 approximately one mile north of Markdale, at the year's end.

On Highway 21 from Highway 7 to Forest, by the end of the construction season the old concrete road had been covered with granular foundation material and paved with a sand asphalt course as part of the general reconstruction of this section of highway. Work proceeded favourably on the reconstruction contract at Wiarton.

Grading, drainage, granular base and hot mix paving on Highway 23 was completed from one mile south of Monkton, northerly 6.7 miles, and work of grading, drainage, and structure on the Boyle Drain Structure and Approaches was finished except for paving and trimming. The structure was opened to traffic in December, 1967. Work commenced on grading, drainage, granular base, hot mix paving and structures from Newry to Listowel.

A new connection between Highways 24 and 24A following a Township Road was built, and this work included a subway under the L.E. and N. Railway.

On Highways 26 and 27 from Barrie to Midhurst, work is well advanced on a grading, drainage, granular base, paving and structure contract. This will be a four-lane highway with lanes separated by a single median.

The structure and approaches over the Canadian Pacific Railway and Thames River on Highway 50 at Woodstock were completed.

From Belmont to Nilestown on Highway 74, grading, granular base, paving and waterproofing of the bridge over Highway 401 was carried out.

On Highway 81 in the Town of Strathroy, bridge over the Sydenham River and the grading, granular base and deep strength paving from Strathroy north limits for a distance of 2.7 miles was finished.

On Highway 86, grading, drainage, granular base, hot mix paving and two structures over the Maitland River (Wingham Diversion) were completed except for the top course paving and trimming. Grading, drainage, granular base and hot mix paving from 5.8 miles east of Elmira, easterly for 8.1 miles including intersection improvement at the junction of Highways 86 and 7 was brought to completion.

Reconstruction in the Village of Shelburne on Highways 80 and 10, including grading, drainage, granular base and hot mix paving was carried out. This contract entailed street widening which improved parking facilities and movement of traffic.

Intersection improvement at the junction of Highways 97 and 8 in the City of Galt was completed.

On Highway 400, resurfacing on the northbound lane from Highway 89 northerly to Barrie and on the two-lane section from the junction of Highway 93 to Highway 12 near Coldwater was performed. An underpass at Vincent Street in Barrie was opened to traffic in mid summer.

In Sarnia on Highway 402 construction was started on the Murphy Road Underpass.

#### CENTRAL AREA

##### Toronto, Hamilton and Port Hope Districts

On the Macdonald-Cartier Freeway a further 2.9-mile section of the Toronto By-Pass was completed to its full width between Wendell Avenue and west of Islington Avenue and opened to traffic. Another section between Don River and Warden Avenue was virtually finished and will be opened to traffic early in the summer of 1968. The section between Don River and Yonge Street will be finished by mid-summer. Reconstruction between Kipling Avenue and Martin Grove Road is progressing rapidly with completion expected in the spring of 1969. From Oshawa easterly for 9.8 miles resurfacing was carried out.

On the Queen Elizabeth Way and Highway 27, two major contracts were awarded from Royal York Road to west of Wickman Road and from east of Highway 27 to west of Etobicoke Creek and north on Highway 27 to the C.P.R. Overhead. Ontario Street interchange in St. Catharines was completed. Channelization improvements were made at the Q.E.W. extension and Stanley Avenue and Falls Avenue in Niagara Falls. Farther south a bridge deck replacement was finished carrying the southbound Q.E.W. traffic over the Michigan Central Railway. Deck repairs and resurfacing were carried out on the Burlington Bay Skyway. Resurfacing was also performed from Highway 405 southerly to Highway 20 and from the Vineland Road to the Garden City Skyway.

Work on the Kitchener-Waterloo Expressway continued with the award of three more contracts: King Street to Frederick Street, King Street to Homer Watson Blvd. and Guelph Street structure. Work progressed very well on these contracts.

On Highway 2 widening to four lanes from Metropolitan Toronto east limits to Dunbarton was almost finished. The top course of hot mix will be placed in the spring of 1968. Grading, granular base, hot mix paving and a structure over the C.N. & C.P. Railways two miles east of Cobourg were finished. Work on the structure and approaches to the new bridge over the Trent River in the Town of Trenton was progressing favourably at year's end. A Contract for grading, drainage, granular base, hot mix paving and two structures on 1.2 miles of Hwy. No. 2 east of Bowmanville was awarded late in the season.

Six miles of four-lane construction on Highway 3 from Fort Erie westerly was finished and clearing and grubbing carried out on the next six miles west to Gasline.

On Highway 6, grading and base paving was completed from Puslinch to Aberfoyle while farther south a clearing and grubbing contract to enable utility relocation was completed from Clappison's Corners northerly for five miles.

On Highway 7 T.C.H. grading, drainage, granular base and hot mix paving was underway during the summer and fall from Peterborough easterly for 7.5 miles. Reconstruction at the intersection at Highway 7B was completed. Contracts were awarded for the replacement of the existing structure over the Little Rouge River and the west branch of Duffin's Creek.

Grading and paving of Highway 8 south of St. Davids in conjunction with the replacement of the C.N.R. Subway was finished. A channelization was built at the intersection of the Welland Canal Service Road at St. Catharines. Reconstruction



from Highway 20 to Winona was almost completed. This included 4-lane construction for a considerable distance east of Highway 20.

Widening of Highway 10 to four lanes from Burnhamthorpe Road to Highway 401 was completed.

At Allanburg, reconstruction of 1.8 miles of Highway 20 was finished.

On Highway 24 from Brantford to the Norfolk County Boundary was resurfaced preparatory to the transfer of this section to Brant County. Concrete paving was completed on Highway 24A from Scotland to Highway 53. At Paris work continued on the Grand River Bridge with the completion of the substructure and the erection of the structural steel. Resurfacing work from Paris to Galt commenced and by year's end the sand-asphalt course had been laid.

Resurfacing was completed on Highway 25 from Highway 401 to Acton.

On Highway 28, grading, drainage, granular base and hot mix paving from S. Monaghan northerly for 1.8 miles was completed. Grading, drainage, granular base, hot mix paving and two structures for 1.6 miles over the Trent Canal and Perry Creek Burleigh Falls north were finished as was grading, drainage, granular base, hot mix paving and bridge improvement for 1.4 miles over the Trent Canal at Young's Point.

On Highway 30, approaches covering 1.7 miles and a structure over the Trent Canal at the Village of Trent River were started.

Detour construction on Highway 33 was finished in the Town of Trenton.

On Highway 45, construction commenced on two structures and approaches on the Trent River Bridge and Head Race Bridge in the Village of Hastings.

Hot Mix Paving on Highway 46 from Highway 505 easterly for 9.4 miles was completed.

On Highway 48, the replacing of the existing bridge over the Pefferlaw Brook River started and will be finished by the summer of 1968.

New concrete pavement on Highway 49 from Roblin Mills northerly for 3.6 miles was opened to traffic.

On Highways 115 and 28, Cavanville Creek Bridge and the interchange were completed as was the resurfacing on Highway 115 from Highway 28 westerly for 7.1 miles.

Highway 122 from Highway 2 to the Queen Elizabeth Way was reconstructed to urban type four lanes. Included in this section of highway was a new subway under the C.N.R. mainline.

Grading on 1.5 mile section of Highway 403 from the T.H. and B. Railway in Hamilton to the Mohawk Road in Ancaster was completed leaving only the large Mohawk Road interchange to finish. Grading and structure work proceeded on the adjacent section from the Mohawk Road to Duff's Corners and a contract for the Railway Subway at the T.H. and B. Railway was awarded and work carried on throughout the winter. This structure will provide for eight sets of tracks.

On Highway 507, grading, drainage, granular base and hot mix paving was well advanced from Highway 28 northerly for 6.3 miles.



The Thorold Tunnel construction continued with the Contractor once more ahead of schedule. Construction of 1.25 miles of new highway from Collier Road to the west portal of the tunnel was well advanced, and work on a 4.8 mile section of Highway 58 from Highway 20 to the east approach to the tunnel was started and progressed favourably.

Due to the success of the new GO (Government of Ontario) Transit system it became necessary to enlarge many of the parking lots. Toronto District supervised the construction of a new parking lot at the Eglinton Station as well as the enlarging of the existing parking lots at Pickering, Guildwood South, Port Credit and Oakville. In addition to the enlarging of parking facilities a contract was awarded and completed for the paving of all parking lots along the GO Transit system.

#### EASTERN AREA

##### Kingston, Ottawa and Bancroft Districts

On the Macdonald-Cartier Freeway paving from Gananoque to the junction of Highway 137 and two structures over Highway 137 were finished. This now leaves only sixteen miles of the entire distance of the Macdonald-Cartier Freeway not open to traffic. The last grading contract made substantial progress. This along with the completion of seven structures, enabled the Department to award the last two paving contracts required to complete the Macdonald-Cartier Freeway. It is expected this final section will be ready for public travel in mid-fall of 1968. The concrete paving of the westbound lanes from Iroquois to Aultsville Road was completed. This completes the paving of the Macdonald-Cartier Freeway in the Ottawa District. Two service centres were completed on the Macdonald-Cartier Freeway east of Highway 31.

In addition to the above, several flyover structures were either completed or under construction on the Macdonald-Cartier Freeway at year's end.

The bulk of a major interchange on the Ottawa Queensway at Blair Road, together with associated work on suburban roads, was completed and the interchange opened to traffic in mid-winter.

On Highway 2, a shoulder widening and hot mix resurfacing was finished between Shannonville and Marysville.

The Madoc by-pass on Trans-Canada Highway 7 was opened to traffic, thus relieving the congested traffic through the Village of Madoc.

On Highways 7 and 15 grading, storm sewers, curbs, sidewalks and paving through the Village of Bell's Corners and reconstruction of the C.P.R. Subway one mile west of Bell's Corners were completed, providing four traffic lanes through a heavily travelled urban area.

Major grading operations on Highway 16 from the end of Monotick By-pass to two miles south of North Gower were finished, and in the Village of North Gower new storm sewers, curb and gutter, sidewalks, and street lighting were installed. The paving will be completed during the summer of 1968.

On Highway 17, grading, drainage and hot mix paving from Moodie Drive to Kennedy's Corner was finished as were the grading and drainage in the Town of Almonte on Highway 29 and resurfacing from Carleton Place to Almonte.

With the completion of granular base and hot mix paving from Moira River northerly for 5.04 miles, Highway 37 has now been reconstructed from Belleville to Tweed.

On Highway 38, a major grading, drainage and granular base contract from Sharbot Lake to Tichborne was awarded late in the year, with the Contractor working throughout the winter months excavating rock. A clearing contract from Tichborne southerly for 8.1 miles was finished.

Work progressed favourably during the winter months on grading on Highway 41 from Denbigh northerly for 5.1 miles.

On Highway 42, a clearing contract from Athens to Delta was finished and a grading contract was awarded in the Fall.

A contract for grading, cement stabilized granular base and hot mix paving on Highway 43 from Highway 31 westerly for 7.2 miles was underway at year's end and it is expected that it will be finished in 1968.

On Highway 49, the Quinte High Level Structure was officially opened to traffic on September 6th, 1967.

Hot Mix Paving from Douglas to Highway 17 was completed.

Grading work on Highway 60 at the east end of Algonquin Park proceeded through the winter, over a 7.3 mile length. This is the last reconstruction contract through the park.

Two structures, the Sherwood River Bridge and Bonnechere River Bridge on Highway 62 (formerly Highway 521), north of Killaloe, were opened to traffic this year. The heavy grading, granular base and grading work on Highway 62, from Combermere to Purdy was brought to completion. Grading work commenced on the same highway from Highway 620 northerly for 6.5 miles.

On Highway 417 at Richmond Road interchange, at the west end of the Ottawa Queensway, grading, drainage, hot mix paving, concrete paving and structure was underway with the completion expected early in 1968. Structures at Acres Road, Moodie Drive and C.N.R. Overpass were also underway and are expected to be finished by September, 1968.

On Highway 515, the sub-structure of the Madawaska River Bridge at Jewellville was completed.

The Portage Du Fort Bridge over the Ottawa River on Highway 653 was opened to traffic in October, 1967.

#### NORTHERN AREA

Huntsville, Sault Ste. Marie, Sudbury, North Bay and New Liskeard Districts

On Highway 11, widening to four lanes was extended northerly 5.25 miles from Kahshe Lake Road to the south end of Gravenhurst. Resurfacing was completed from 6.10 miles north of junction of Highway 64 to 1.35 miles north of Temagami Mine Road, a distance of 15.20 miles. The road within the Finlayson Provincial Park was also paved under this contract. The rebuilding of Highway 11B from it's south junction with Highway 11, north of Latchford, through Cobalt to New Liskeard,

excluding the Town of Haileybury Connecting Link, was underway during the year. This included a considerable amount of urban work.

Reconstruction of Highway 17 from Deux Rivieres Creek easterly for 5.57 miles and from Laronde Creek to Sturgeon Falls covering about 13 miles was finished. From Sturgeon Falls west limits westerly for 9.2 miles resurfacing was carried out. Grading, drainage, granular base and hot mix paving was completed from the junction of Highway 17 and Secondary Highway 539 westerly to Hagar, a distance of 5.25 miles, as was the grading and paving from Bruce Mines west limits westerly for 6.55 miles bringing this section of highway to Trans-Canada standards. Also brought up to Trans-Canada standards was the section (through very rough terrain) from Montreal River southerly for 11.13 miles. Grading, drainage, granular base and hot mix paving from the junction of Highway 606 and 17 westerly for 4.9 miles was partially completed.

On Highway 35, a heavy rock grading contract from 7.7 miles south of Highway 118 at Dorset southerly for 8.6 miles, which includes a new structure at the Ox Narrows crossing continued through the winter months.

On Highway 63 from North Bay City Limits easterly for 2.46 miles, grading, drainage, granular base, hot mix paving and a three-span overhead bridge over the Ontario Northland Railway was approximately 90 percent completed by year's end.

Grading and granular base was finished on Highway 67 from Highway 11 to Secondary Highway 610, and work on the remaining section southerly to Highway 101 was started.

Completed projects on Highway 69, were paving at the Moon River Bridge in Bala and resurfacing for 4.74 miles from the junction of Highways 69 and 103 northerly. Grading from 1.7 miles east of Gravenhurst northwesterly for 8.32 miles was well advanced and will be completed in 1968. Resurfacing and extensive frost heave treatment from Sudbury South limits southerly for 21 miles was carried out.

On Highway 101 granular base and paving for 9.3 miles east of Matheson was completed, while the grading from Highway 576 westerly to Highway 144 was finished with the paving to be completed in 1968. Work proceeded favourably on a reconstruction contract covering about 15 miles westerly from Foleyet on Highway 101. The first course of paving was placed on a contract covering 26 miles near the west end of Highway 101 from Highway 547 easterly.

Grading and paving on Highway 118 between Port Carling and Milford Bay and the reconstruction of 1.27 miles of highway at its intersection with Highway 632 were completed. Grading from Baysville westerly for 4.87 miles progressed well.

The rebuilding of the 2.5 miles of Highway 123 from Highway 11 to the North Bay Airport was carried out. The work included a climbing lane to the top of the escarpment.

During the year, 1.38 miles of Highway 124 westerly from 3.2 miles west of the east junction of Highway 520 were rebuilt, including a new structure over the Magnetawan River and a large arch culvert at the Shadow River. Paving will be carried out in 1968.

Work continued on reconstructing Highway 129 from the South limits of Chapleau southerly for 16.04 miles. This work included a structure over the Nebskwashi River.

On Highway 144, 2.8 miles of new alignment was completed from Highway 544



westerly to Windy Lake Park entrance including a structure over the Windy Creek and the paving of the roads in Windy Lake Provincial Park. Work on the new Sudbury-Timmins section of Highway 144 progressed very well with this section being extended to 15.9 miles north of Benny with the completion of a grading, drainage and granular base contract, 7.9 miles in length, and an additional eight miles of clearing on new alignment to the north. Grading, drainage and granular base is now underway on this cleared section as well as further clearing to a point 32 miles north of Benny. A structure was finished over Bailey Creek, north of Benny. From Highway 101 southerly for 32 miles Highway 144 was opened to traffic, and in addition two major grading contracts covering 15.3 miles were almost completed at winter shutdown. Also two major grading contracts covering 17.9 miles were awarded, during the winter, but no work was started on these contracts.

Grading, drainage and granular base on Highway 535 from Noelville, northerly for 3.27 miles was completed.

On Highway 538 a structure was built over the Lauzon Creek.

Grading, granular base and paving on Highway 576 from Highway 101 to the Kam Kotia Mine, a distance of 15.56 miles was finished.

Work on Highway 614 from nine miles south of Manitouwadge southerly for 9.46 miles was completed and in addition, work commenced on a new 12.2 mile section, the final link to Highway 17 from the Town of Manitouwadge.

Work on Highway 651 from the intersection of Highway 101 northerly to Dalton continued with the completion of 9.06 miles during 1967-68 and the balance of 7.97 miles including structures over the Windermere River and Ogasiwi Creek was well underway at the end of the year.

#### NORTHWESTERN AREA

##### Cochrane, Fort William and Kenora Districts

On Highway 11, paving from the Seine River westerly for 38.60 miles and grading, granular base and paving from Emo to Barwick a distance of 7.25 miles were completed. Resurfacing from Emo to Devlin and from the east limits of Fort Frances easterly for 1.89 miles was finished. Contracts for clearing on the right-of-way were completed on two sections from 55 miles west to 75 miles west of Hearst and from 75 miles west to 94 miles west of Hearst. Between Nipigon and Beardmore reconstruction covering 16 miles progressed very well.

A ten-mile reconstruction project on Highway 17 between Raith and Upsala was carried out with rented equipment under the supervision of district construction staff. This project was the first of this type in the Department. Reconstruction between English River and Ignace was finished. Granular base and paving work was underway east of Upsala at year's end.

On Highway 71 paving from Nestor Falls southerly for 8.3 miles and grading of a further 9.1 miles, from 9.0 miles south of Nestor Falls were brought to completion.

Grading on Highway 72 from the junction of Highway 17 northerly 26 miles and the first course of pavement were finished. Grading of a further 11 miles northerly was well advanced by the end of the construction season. A structure was erected over the Pelican River at the south limits of Sioux Lookout.



By late summer, Highway 105 from Highway 17 to Red Lake was completely reconstructed, with a hot mix paved surface for the entire distance.

Various sections of the Lakehead Expressway were under construction, clearing being completed for almost its entire length. One section between Port Arthur and Fort William was opened to traffic and another section, eventually to connect Highway 61 to Highway 17 was commenced. This latter section includes a substantial structure crossing the Kaministiquia River. This bridge foundation incorporates some 108 hexagonal prestressed concrete piles greater than 50 feet in length and the unique experience gained in the fabrication and driving of these piles will prove invaluable in future designs of this type.

On Highway 116, a structure over the Vermillion Narrows was completed, as was the structure on Highway 125 over the Chukuni River.

On Secondary Highway 577 from Ansonville to 0.66 miles south, and on Secondary Highway 581 from Highway 11 northerly to Remi Lake, grading, drainage, granular base and hot mix paving contracts were finished.

Construction on Secondary Highway 631 from Hornepayne southerly proceeded favourably. The first contract covering 6.72 miles was completed and an additional 7.2 miles was finished, with the exception of the granular "A" material. Work proceeded in the third contract south of Hornepayne during the winter months.

**TABLE SHOWING TOTALS OF WORK DONE**

CLASS OF WORK	No.	TONS	MILES
Automatic signals at railway crossings .....	18	—	—
Bituminous hot mix pavement .....	—	1,769,243.94	615.71
Bituminous mulch and cold mix .....	—	117,859.71	800.00
Bituminous prime on gravel roads ..... (gals.)	1,675,373	67,362.18	646.26
Bituminous resurfacing old pavement .....	—	367,214.25	771.60
Bituminous surface treatment ..... (gals.)	1,174,684	72,238.82	381.80
Bridges built .....	79	—	—
Bridges painted .....	78	—	—
Calcium dust layer — gravel roads .....	—	15,391.67	924.00
Calcium for de-icing roads .....	—	18.20	—
Concrete base pavement asphalt top .....	—	102,275.00	29.9
Concrete pavement ..... (sq. yds.)	—	654,408.00	30.59
Crushed gravel and stone (by contract) .....	—	9,265,798.16	1,128.00
Crushed gravel and stone (by dept. forces) .....	—	860,809.44	5,654.34
Grading and culverts .....	—	—	485.9
Granular base on new grading .....	—	12,562,820.40	560.9
Granular base on old grading .....	—	483,973.00	107.8
New buildings erected this year .....	63	—	—
Off-road parks maintained .....	233	—	—
Roads snowplowed and kept open (King's hwy.) .....	—	—	11,364.9
Roads snowplowed and kept open (secondary hwy.) .....	—	—	3,120.2
Roadside picnic places maintained .....	723	—	—
Routine maintenance (King's hwy.) .....	—	—	11,364.9
Routine maintenance (secondary hwy.) .....	—	—	3,120.2
Salt for de-icing roads (raw) .....	—	248,901.26	—
Salt in sand, stockpiled .....	—	44,067.63	—

Sand for winter maintenance .....	—	975,769.00	—
Scale houses maintained .....	46	—	—
Seeding by department's forces ..... (acre)	2,747.85	—	—
Shrubs received and planted .....	23,784	—	—
Signs newly erected or replaced .....	106,740	—	—
Snow hedges planted this year .....	—	—	2.27
Snow fence erected, dismantled, stored .....	—	—	778.75
Traffic lights installed this year .....	63	—	—
Weed control .....	—	—	12,661.35
Zone painting (King's hwys. and sec. hwys.) (gals.)	193,147	—	11,716.00
Development roads built .....	—	—	96.26

SUMMARY OF NEW SECTIONS OF KING'S HIGHWAYS

Completed During Fiscal Year 1967-68

NEW 4 LANE ROADS

Hwy. No.	LOCATION	MILES
10	Burnhamthorpe Road to the Macdonald-Cartier Freeway .....	3.0
11	Kahshe Lake Rd. to Gravenhurst .....	5.3
137	Macdonald-Cartier Freeway to Ivy Lea Bridge .....	1.2
401	Gananoque to Hwy. 137 .....	9.6
Kitchener-Waterloo Expressway — Kitchener .....		1.7
401	Iroquois to Aultsville Sideroad .....	16.2
7 & 15	East and West of Bell's Corners .....	2.2
122	Hwy. 2 to Queen Elizabeth Way .....	1.2
2	Sheppard Ave. to Dunbarton .....	2.2
TOTAL .....		42.6

NEW 2 LANE ROADS

Hwy. No.	LOCATION	MILES
49	Quinte Skyway southerly .....	3.6
86	Wingham Diversion .....	1.8
144	25 miles south of Hwy. 101 southerly .....	2.3
144	North of Benny .....	7.9
144	Hwy. 544 westerly .....	2.8
8	St. Davids southerly .....	0.6
24A	Scotland to Hwy. 53 .....	8.4
651	Highway 101 northerly .....	9.1
631	Hornepayne southerly .....	6.7
TOTAL .....		43.2

NEW BRIDGES COMPLETED IN 1967-68

During the fiscal year, 79 new bridges were completed.

## MAINTENANCE DIVISION

E. J. Orr, P.Eng., Maintenance Engineer

### DEPARTMENT'S CRUSHING PLANT

The Department crusher, working in the Kenora District produced 159,909 tons of  $\frac{5}{8}$ " granular 'A' material. Most of this crushed material was placed in stockpile for future maintenance requirements and 66,065 tons was placed directly on King's Highways and Secondary Highways in the Kenora District.

### MULCH PAVEMENT

Mulch pavement, mixed and laid by Department forces, totalled 67.45 miles in the following districts.

Port Hope .....	0.70 miles
Bancroft .....	7.85 "
Huntsville .....	17.00 "
North Bay .....	12.00 "
New Liskeard .....	22.10 "
Sudbury .....	1.90 "
Sault Ste. Marie .....	5.90 "
	<hr/>
	67.45 miles

### ZONE PAINTING

Our zone striping equipment, comprised of 13 dual and 9 single paint striper, painted centre line marking on 11,716 miles of King's and Secondary Highways. In addition yellow paint was applied along the pavement edge for a total of 2,641 miles of edge line.

Our zone striper replacement program continued with Toronto and Huntsville Districts, each receiving a new dual machine replacing their old single units.

This year several Districts were provided with 6" fluorescent blaze-orange plastic cones which were used in place of our standard wooden blocks with flags for protecting our traffic paint until dry. These cones were purchased for trial operation and indications are that in the interest of safety and durability, the Department will change over completely next year to these cones.

### SIGNS

During the year, District forces manufactured and erected 106,740 signs. This total includes all types of signs from fingerboards, curve and stop signs, to the large cantilever and overhead extruded aluminum signs.

### WINTER MAINTENANCE

The winter of 1967-68 was similar to the winters experienced over the past three years. The extent of snowplowing required was comparable to these previous years.

and approximately 868,200 tons of abrasives and 295,300 tons of de-icing chemical were applied during our winter maintenance operations.

Our efforts to reduce or prevent contamination of soil and ground water in the vicinity of our winter sand and salt stockpiles continued this year with the erection of two additional timber domes for our sand stockpiles at Barry's Bay and Marysville. This brings the number of these domes constructed and in use to three; one was erected in Flesherton in 1966. In a further effort to improve our winter maintenance operations, a smaller version of the dome building was constructed at Chatsworth for the storage of raw salt. Indications are that these domes are effective in controlling salt contamination and this program will be continued where conditions warrant.

#### **MAINTENANCE MANAGEMENT PROJECT**

All districts were incorporated into the revised reporting system during the year. The main change in reporting is that accomplishment is now reported by maintenance field staff with the data arranged in various ways through the use of the computer.

The Training and Methods Groups provided training materials and analyzed work methods employed for major operations. It is considered that such training and improved work methods will result in increased productivity of field maintenance staff.

#### **FORESTRY AND LANDSCAPE**

The area covered by grass seeding operations again totalled more than 20,000,000 square yards. Day Labour forces accounted for 12,622,720 square yards. Work accomplished by contract totalled 7,448,760 square yards.

Herbicide application for the control of weeds and brush covered 14,655 miles. Some 18,899 gallons of selective herbicide was used and supplemented with 37,100 lbs. of Sodium T.C.A. for the control of evergreen brush. Soil sterilant in roadside maintenance accounted for the use of 4,250 lbs. of non selective herbicide.

In the southern districts, 12,841 dead or dangerous trees were removed. Utility companies were issued permits for the removal of 825 trees. A total of 2,952 were removed through maintenance contracts and 9,064 by district forestry crews.

The planting of 48,519 trees and shrubs was carried out in sixteen districts under the roadside improvement programme. Included in this work was the continuation of planting schemes for the benefit of picnic areas associated with service centres.

Normal tree planting was augmented by the use of the Department's "Tree Saver" machine to relocate large trees prior to construction. A total of 459 trees were relocated in eight districts.

#### **INSPECTION AND MAINTENANCE OF BRIDGES**

**W. D. Birch, Bridge Maintenance and Inspection Engineer**

During 1967, nearly 1400 bridges on main highways and secondary roads were inspected by the staff of the Bridge Maintenance Section. The District Engineers were advised if repairs were necessary and when load restriction signs should be posted and the Program and Planning Sections were advised concerning replacement.



The Section designed approximately fifteen temporary detour structures consisting of bailey bridges. There were also approximately twenty bailey bridge structures designed by this section and erected by District Day Labour Forces for indefinite use as replacements or reinforcements for faulty existing structures.

The longest bailey bridge detour was erected by contract over the Trent River at Hastings. This consisted of two 450 ft. bridges on common rock filled timber cribs.

Structures reinforced with bailey bridge panels include the Wanapitae River Bridge on Highway 17 which had experienced partial failure due to brittle fracture. The bridge was repaired in a few days and traffic continued throughout the operations. The Chalk River on Highway 17 was reinforced by bailey bridging after being damaged to near failure. The Ox Narrows Bridge on Highway 35 was reinforced with bailey bridge panels to support heavy construction loads.

The policy of waterproofing existing structures was continued and all good bridge decks under repaving contracts were repaired and waterproofed by means of hot rubberized ductile asphalt or an emulsion membrane. The use of asbestos modified asphalt without waterproofing was used on one structure for test purposes.

The underwater investigation of bridge piers and foundations was continued on approximately six structures. The Rideau River Bridge piers on Highway 16 were found to be so deteriorated that it was necessary to make renovations. This was done without any interference to the travelling public.

Ferry operations continued without too much trouble. The Federal Government dock at Kingston was rebuilt and this Section designed the ramp which can be manually adjusted to suit the rapid changes in water level.

Painting of 27 Bridges and 24,500 lineal feet of handrail was completed. Of this amount 6 bridges and 7,500 lineal feet of handrail was done by District Forces. Some of the painting performed by the contractors was done with zinc rich paint and zinc metallization as part of an experimental program.

During the year April 1st, 1967 to March 31st, 1968, electrical equipment was installed as per the detailed list below. This was in addition to many miscellaneous jobs such as wiring small buildings, radio towers, etc. and all normal maintenance work.

New work is summarized below

Highway Lighting .....	3,380
Traffic Signals .....	50
Flashers .....	48 Locations 88 Flasher Beacons
Sign Lighting .....	37 Locations 184 On Pedestals, Cantilver and Truss Structures
Weigh Scale, Salt Sheds, Patrol Office, Field Office .....	180

## HIGHWAY LIGHTING

## Installation Put Into Operation

April 1, 1967 — March 31, 1968

## DISTRICT 1 — CHATHAM

- 1-3B-29 Hwy. 3B — Cabana Rd. to Ouellette Ave.,  
(4) 460-watt mercury vapour units.
- 1-3-107-40 Hwy. 3 and Hwy. 107 — Village of Ruthven, (5) fluorescent.
- 1-402-49 Hwy. 402 at Murphy Rd. — Sarnia, (4) 460-watt mercury vapour units temp.
- 1-39-2-54 Hwy. 39 and Hwy. 2 Twp of Rochester Co. of Essex,  
(3) 460-watt mercury vapour units.
- 1-79-71 Hwy. 79 and Co. Rd. 24, (2) 460-watt mercury vapour units.
- 1-7-79 Hwy. 7 from Modeland Rd. E. 1.2 mi. Sarnia,  
(70) 460-watt mercury vapour units.
- 1-2-89 Hwy. 2, Tilbury, (29) 460-watt mercury vapour units.
- 1-7-92 Hwy. 7 and Waterworks Rd., (2) 460-watt mercury vapour units.  
Patrol Yards, 15, 5, 7, 14, 19, 1, (9) 460-watt mercury vapour units.

## DISTRICT 2 — LONDON

- 2-4-7-66 Hwys. 4 and 7, Elginfield, (8) 400-watt mercury vapour Type II.
- 2-22-81-58 Hwy. 22 and 81, (2) 400-watt mercury vapour Type II.
- 2-24-81 Hwy. 24 and Development Rd., 684, (3) 400-watt mercury vapour Type II.
- 2-24-3-96 Hwys. 3 and 24, Simcoe, (6) 400-watt mercury vapour Type II.
- 2-74-97 Hwy. 74 and Hamilton Rd., Nilestown,  
(2) 400-watt mercury vapour Type II.
- 2-7-102 Hwy. 7 and County Rd. 17, near Parkhill,  
(2) 400-watt mercury vapour Type II.

## DISTRICT 3 — STRATFORD

- 3-7-86-42 Hwy. 7 and 86, (3) 400-watt mercury vapour Type II.
- 3-7-65 Hwy. 7 E. limits of Kitchener to Bingeman Park Rd.,  
(19) 400-watt mercury vapour Type II.
- 3-4-53 Hwy. 4 and Hwy. 86, Wingham, (4) 100-watt VHO 48" luminaires.
- 3-23-71 Hwy. 23 in Kirkton, (16) 250-watt mercury vapour units.  
Patrol 15, 25, (6) 400-watt mercury vapour units,  
(1) 250-watt mercury vapour unit.

## DISTRICT 4 — HAMILTON

- 4-Q.E.W.-27 Hwy. Q.E.W. Central Ave., Fort Erie, (6) 400-watt mercury vapour Type II.
- 4-8-97-57 Hwys. 8 and 97 Galt, (6) 400-watt mercury vapour Type II.
- 4-3-128 Hwy. 3 at Gorham and Stevensville Rd.,  
(3) 400-watt mercury vapour Type II.
- 4-Q.E.W.-186 Q.E.W. at Goderich St., Fort Erie, (3) 400-watt mercury vapour Type II.
- 4-24-53-215 Hwy. 24 and 53 E. of Brantford, (3) 400-watt mercury vapour Type II.
- 4-Q.E.W.-218 Q.E.W. at Ontario St., St. Catharines, (38) 400-watt mercury vapour Type II.
- 4-24-249 Hwy. 24 at County Rd. 23 (Powerline Rd.),  
(3) 400-watt mercury vapour Type II.
- 4-24-261 Hwy. 24 (New) and County Rd. 4, Scotland, Ont.,  
(3) 400-watt mercury vapour Type II.
- 4-6-309 Hwy. 6 from Northcliff Ave. to Hwy. 5,  
(50) 400-watt mercury vapour Type II.
- 4-14-N8 Rainbow Bridge Traffic Circle and Interconnecting Rd.,  
(62) 370-watt luminaires.

## DISTRICT 5 — OWEN SOUND

- 5-26-1 Hwy. 26 and County Rd. 7, Brock's Beach,  
(7) 400-watt mercury vapour Type II.
- 5-26-49 Hwy. 26, Beaver River Bridge, Thornbury,  
(2) 185-watt VHO fluorescent lights.
- 5-27-12-61 Hwy. 27 and 12, Midland, (3) 400-watt mercury vapour Type II.
- 5-6-10-68 Hwy. 6 and 10 at Grey County Rd. 18, Rockford,  
(2) 400-watt mercury vapour Type II.

## DISTRICT 6 — TORONTO

- 6-Q.E.W.-2 Hwy. 27 and Q.E.W. and Evans Ave., (8) 400-watt mercury vapour units.
- 6-2-62 Hwy. 122 and 2, (26) 400-watt mercury vapour units.
- 6-Q.E.W.-73 Q.E.W. from Hwy. 27 to Dixie Rd., (58) 400-watt mercury vapour units.
- 6-401-93 Hwy. 401 and Leslie St., Cont. 65-205, (20) 700-watt mercury vapour units,  
(90) 400-watt mercury vapour units.
- 6-401-94 Hwy. 401 and Warden Ave., (9) 400-watt mercury vapour units.
- 6-401-95 Hwy. 401 at Weston Rd., Contract 65-55, (15) 700-watt mercury vapour units,  
(22) 400-watt mercury vapour units.
- 6-401-98 Hwy. 401 and Yonge St., (15) 400-watt mercury vapour units,  
(8) 250-watt mercury vapour units.
- 6-401-103 Hwy. 401 and Simcoe St., (4) 400-watt mercury vapour units.
- 6-401-111 Hwy. 401 and Sheppard, (3) 400-watt mercury vapour units.
- 6-122-166 Hwy. 122 and Truscott Dr., (8) 400-watt mercury vapour units.
- 6-7-188 Hwy. 7 and 2nd Line, (2) 400-watt mercury vapour units.
- 6-Q.E.W.-287 Q.E.W. and Kipling Ave., (57) 400-watt mercury vapour units.
- 6-401-291 Hwy. 401 and Dixie Rd., (6) 400-watt mercury vapour units.
- 6-48-276 Hwy. 48 and Steeles, (2) 400-watt mercury vapour units.
- 6-10-304 Hwy. 10 and Base Line, (2) 400-watt mercury vapour units.
- Contract 67-37 Queen E., (15) 700-watt, 347 volts, luminaires, M.V.,  
(65) 400-watt mercury vapour units.
- Contract 67-40 Queen E., (14) 400-watt mercury vapour units.
- Contract 66-42 Hwy. 401, Victoria Park Ave. to Warden Ave.,  
(122) 400-watt mercury vapour units, (25) 700-watt mercury vapour units.
- Contract 65-56 Hwy. 401 at Don Valley Parkway, (17) 400-watt mercury vapour units,  
(2) 700-watt mercury vapour units.
- Contract 65-131 Hwy. 401 and Yonge St. and Bayview Area,  
(41) 700-watt mercury vapour units, (58) 400-watt mercury vapour units.
- Contract 66-296 Hwy. 401 at Dixon Rd., (12) 400-watt mercury vapour units.  
Oakville Commuter Station, (4) 400-watt mercury vapour units, (36) 250-watt  
mercury vapour units.  
Eglinton Commuter Station, (6) 400-watt mercury vapour units.  
Guildwood Commuter Station N. and S. side,  
(4) 400-watt mercury vapour units.  
Pickering Commuter Station, (4) 400-watt mercury vapour units.

## DISTRICT 7 — PORT HOPE

- 7-7-7B-53 Hwy. 7 and 7B, Fowlers Corners, (4) 400-watt mercury vapour units.

## DISTRICT 8 — KINGSTON

- 8-33-17 Hwy. 33 at Day's Rd., (2) 400-watt mercury vapour units.
- 8-41-23 Hwy. 49 and Quinte Skyway, (28) 400-watt mercury vapour units,  
(2) 700-watt mercury vapour units.
- 8-2-2S-32 Hwys. 2 and 2S (Old 401) E. of Gananoque,  
(6) 400-watt mercury vapour Type II.
- 8-401-2-2S-45 Hwy. 401, Exit and Entrance Ramp to Hwy. 2 and 2S (Old 401) at Gananoque,  
(8) 400-watt mercury vapour Type II.
- 8-7-48 Hwy. 7, Madoc By-Pass, (4) 400-watt mercury vapour Type II.
- 8-7-62-49 Hwy. 62 from Hwy. 7 to Prince Albert St., (2) 400-watt mercury vapour units.
- 8-7-50 Hwy. 7 E. approach Madoc By-Pass, (3) 400-watt mercury vapour Type II.

## DISTRICT 9 — OTTAWA

- 9-29-3 Hwy. 29 at William St., Carleton Place, (16) 400-watt mercury vapour units.  
 9-2-4 Hwy. 2 and 31 Morrisburg, (15) 400-watt mercury vapour units.  
 9-Q-9 Ottawa Queensway, (1,512) 400-watt mercury vapour units,  
 (142) lamp 4' fixtures.  
 9-2-16 Hwy. 2 at Carmen Rd., (14) 400-watt mercury vapour units.  
 9-17-19 Hwy. 17 at Village of L'Orignal, (6) 400-watt mercury vapour units.  
 9-17-44-21 Hwy. 17 and 44, Huntley, (3) 400-watt mercury vapour units.  
 9-401-22 Hwy. 401 and Crysler Memorial Park, (4) 400-watt mercury vapour units.  
 9-17-27 Hwy. 17 and Windover Rd., (4) 400-watt mercury vapour units.  
 9-17-29-31 Hwy. 17 and 29 Arnprior, (3) 400-watt mercury vapour units.  
 9-17-34-32 Hwy. 17 and 34, Hawkesbury, (8) 400-watt mercury vapour units.  
 9-7-7B-33 Hwy. 7 and 7B W. of Carleton Place, (14) 400-watt mercury vapour units.  
 9-17-37 Hwy. 17 TCH E. of Rockland, (3) 400-watt mercury vapour units.  
 9-17-44 Hwy. 17 TCH W. of Rockland, (2) 400-watt mercury vapour units.  
 9-7-52 Hwy. 7 and Hwy. 15 at Stittsville Station Rd.,  
 (3) 400-watt mercury vapour units.  
 9-17-60 Hwy. 17 and Village of Carp, (3) 400-watt mercury vapour units.  
 9-17-62 Hwy. 17 and Blair Rd. Twp., (106) 400-watt mercury vapour units.  
 9-7-15-65 Hwy. 7 and 15, Bell's Corners, (9) 400-watt mercury vapour units.  
 9-17-44-67 Hwy. 17, Jct. Hwy. 44 westerly to Antrim, (2) 400-watt mercury vapour units.  
 9-17-69 New Hwy. 17 — Village of Plantagenet, (8) 400-watt mercury vapour units.  
 9-17-82 Hwy. 17 — Village of Petawawa, (3) 400-watt mercury vapour units.  
 9-Q-7-15-87 Queensway and Hwy. 7 and 15 Interchange,  
 (107) 400-watt mercury vapour units.  
 9-31-94 Hwy. 31, Metcalfe Rd., (4) 400-watt mercury vapour units.  
 9-7-31-112 Manotick Side Rd. 7 and Hwy. 31, (5) 400-watt mercury vapour units.  
 9-17-62-120 Hwy. 17 and 62, (11) 400-watt mercury vapour units.

## DISTRICT 10 — BANCROFT

- 10-648-20 Hwy. 648 in Village of Harcourt, (6) 400-watt mercury vapour Type II.

## DISTRICT 11 — HUNTSVILLE

- 11-11-7 Hwy. 11, south of Gravenhurst, (9) 400-watt mercury vapour units.  
 11-69-103-51 Hwys. 69 and 103, (3) 400-watt mercury vapour units Type II.

## DISTRICT 13 — NORTH BAY

- 13-123-30 Hwy. 123 O'Brien St. Intersection (2) 400-watt mercury vapour Type II.  
 13-63-39 Hwy. 63 Intersection of Milne Ave., (2) 400-watt mercury vapour Type II.  
 13-63-40 Hwy. 63 Intersection of Lakeside Dr.,  
 (2) 400-watt mercury vapour units Type II.  
 13-123-42 Hwy. 123 Intersection of Airport Rd.,  
 (5) 400-watt mercury vapour Type II.

## DISTRICT 14 — NEW LISKEARD

- 14-11-67-1 Hwy. 11 and 67, Porquis Junction; (2) 400-watt mercury vapour units.  
 14-11-11 Hwy. 11, 4 mi. N. New Liskeard, (11) 400-watt mercury vapour Type II.  
 14-65-11-12 Hwy. 11 at ramp of Hwy. 65, (1) 400-watt mercury vapour unit.  
 14-11-19 Hwy. 11B S. of Cobalt and Hwy. 11, (3) 400-watt mercury vapour units.

## DISTRICT 19 — FORT WILLIAM

- 19-11-6 Hwy. 11, Longlac Indian Reserve, (44) 250-watt mercury vapour units,  
 (1) 400-watt mercury vapour unit.



19-11A-19	Hwy. 11A and Lakehead Expressway, (18) 400-watt mercury vapour units.
19-11-17-20	Hwy. 11 and 17, John Street Lakehead Expressway, (6) 400-watt mercury vapour units.
19-0-28	Terrace Bay, (5) 175-watt mercury vapour units.
19-130-33	Hwy. 130 and Lakehead Expressway, (10) 400-watt mercury vapour units.
19-590-34	Hwy. 590, Murillo, (2) 175 watt mercury vapour units. 3 miles W. Port Arthur city limits on Hwy. 11A weigh scales, (11) 400-watt mercury vapour units. 7 miles W. of Fort William city limits on Hwy. 11-17 weigh scales, (11) 400-watt mercury vapour units.

## DISTRICT 20 — KENORA

20-105-17-8	Vermilion Bay Hwy. 17 weigh scales, (5) 400-watt mercury vapour units. Hwy. 17 and 105 — Vermilion Bay, (2) 400-watt mercury vapour Type II.
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## TRAFFIC SIGNALS

## Installation Put Into Operation

April 1, 1967 — March 31, 1968

## DISTRICT 1 — CHATHAM

1-3-1	Hwy. 3 and 3B, Windsor, fully actuated (rebuilt).
1-402-17	Jct. of Hwy. 402 at Murphy Sideroad, Sarnia, fixed time (new).

## DISTRICT 2 — LONDON

2-3-19	Hwy. 3 and Hwy. 24, Simcoe, fully actuated (rebuilt).
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## DISTRICT 3 — STRATFORD

3-7-11	Hwy. 7 and Waterloo Co. Rd. 13, Breslau, fully actuated (new).
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## DISTRICT 4 — HAMILTON

4-Q.E.W.-7	Q.E.W. and Stanley Avenue, semi-actuated (rebuilt).
4-Q.E.W.-108	Q.E.W. at Ontario Street, north side, St. Catharines, fixed time (new).
4-Q.E.W.-109	Q.E.W. at Ontario St., south side, St. Catharines, fixed time (new).
4-3-61	Hwy. 3 at Gorham and Stevensville Rd., fully actuated (rebuilt).
4-97-8-86	Hwys. 97 and 8, Galt, fully actuated (rebuilt).
4-25-113	Hwy. 25 at North Service Rd., Guelph Line, fixed time (new).
4-Q.E.W.-122	Q.E.W. and Niagara Falls, fixed time (new).
4-25-131	Hwy. 25 at East Ramp, Guelph Line, fixed time (new).
4-25-132	Hwy. 25 at Harveston Rd., Guelph Line, fixed time (new).
4-2-5-133	Hwys. 2 and 5, Paris, fully actuated (rebuilt).
4-0-137	Jct. of Church and Thomas St., Oakville, fixed time (new).
4-Q.E.W.-11	Q.E.W. and Goderich St., Fort Erie, fixed time (rebuilt).

## DISTRICT 6 — TORONTO

6-7-30	Hwy. 7 and Don Mills, fully actuated (rebuilt).
6-11-36	Hwy. 11 and Thornhill, fixed time (rebuilt).
6-7-51	Hwy. 7 and 48, fully actuated (rebuilt).
6-11-54	Hwy. 11 and Markham, fixed time (renovated).
6-27-61	Hwy. 27 and Albion Rd., fully actuated (rebuilt).
6-5-75	Hwy. 5 and Cawthra Rd., fully actuated (renovated).

6-10-86	Hwy. 10 and Base Line Rd., fully actuated (rebuilt).
6-11-97	Hwy. 11 and Davis Dr., fully actuated (rebuilt).
6-122-2-77	Hwy. 122 and 2, fully actuated (rebuilt).
6-11-105	Hwy. 11 and Elgin Mills, fixed time (renovated).
6-11-107	Hwy. 11 and Levondale, fixed time.
6-122-158	Hwy. 122 and Truscott Dr., fully actuated (rebuilt).
6-7-162	Hwy. 7 and 2nd Line, fully actuated (new).
6-7-173	Hwy. 7 and Galsworthy, fully actuated (new).
6-7-174	Hwy. 7 and Jane St., fully actuated (renovated).
6-11-181	Hwy. 11 and Royal Orchard Blvd., fully actuated (new).

## DISTRICT 8 — KINGSTON

8-33-8	Hwy. 33 at Day's Rd., fully actuated (new).
8-2S-137-11	Hwy. 2S (Old 401) at 137 Ivy Lea, fully actuated (new).

## DISTRICT 9 — OTTAWA

9-2-4	Hwy. 2 and 31, Morrisburg, fully actuated (new).
9-7-8	Hwy. 7 and Lyhar Rd., fully actuated (new).
9-7-9	Hwy. 7 and Richmond Rd., fully actuated (new).
9-17-11	Hwy. 17W and Camp Petawawa, fully actuated.
9-7-12	Hwy. 7 and Naniamo Dr., Ottawa, fully actuated (new).
9-17-16	Hwy. 17, Blair Rd., Skead Rd., Ogilvie Rd., fully actuated (new).
9-7-17	Hwy. 7 and Bayshore, fully actuated (new).

## DISTRICT 14 — NEW LISKEARD

14-11B-65-2	Hwy. 11B and 65 Intersection of Whitewood Ave., fully actuated (new).
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## DISTRICT 17 — SUDBURY

17-17-15	Jct. of Hwys. 17 and 536, fully actuated (rebuilt).
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## DISTRICT 19 — FORT WILLIAM

19-11A-17A-2	Hwy. 11A and Lakehead Expressway, fixed time (new).
19-11-17-130-3	Hwy. 130 and Lakehead Expressway, fixed time (new).
19-11-17-5	Hwy. 11 and 17, John St. and Lakehead Expressway, fixed time (new).

## SIGN LIGHTING

## Installation Put Into Operation

April 1, 1967 — March 31, 1968

## DISTRICT 4 — HAMILTON

4-Q.E.W.-15	Q.E.W. east of Stanley Ave., (1) 100-watt incandescent on pedestal.
4-2-5-18	Hwys. 2 and 5, Paris, (1) 100-watt incandescent on pedestal.
4-3-30	Hwy. 3 at Gorham and Stevensville Rd., (2) 100-watt incandescent on pedestal.
4-Q.E.W.-31	Q.E.W. and Ontario St. overpass, St. Catharines, (13) 4' fluorescent fixtures.
4-8-97-32	Hwys. 8 and 97, Galt, (2) 100-watt incandescent on pedestal.
4-Q.E.W.-33	Q.E.W. west of Q.E.W. Niagara Leg., (2) 6' fluorescent fixtures.
4-Q.E.W.-122	Q.E.W. and Niagara Falls, (1) 100-watt incandescent on pedestal.
	Rainbow Bridge Traffic Circle and Interconnecting Rds.,
	(3) 8' fluorescent fixtures, (2) 6' fluorescent fixtures.

## DISTRICT 5 — OWEN SOUND

5-12-7 Hwy. 12 and 103, (5) 4' fluorescent fixtures.

## DISTRICT 6 — TORONTO

6-Q.E.W.-34 Q.E.W. and 5th Line Circle, (18) 4' fluorescent fixtures,  
(10) 6' fluorescent fixtures.  
(2) Truss signs (2) Cantilevers.  
6-27-46 Hwy. 27 and Albion, (3) 150-watt keep right signs on pedestal.  
6-Q.E.W.-51 Q.E.W. west of Hwy. 27, (2) 150-watt fixtures on sign.  
6-401-77 Hwy. 401 and Yonge, (3) Cantilevers, (2) 6' fluorescent fixtures,  
(4) 4' fluorescent fixtures.  
6-122-2-80 Hwy. 122 and 2, (4) 150-watt keep right signs on pedestal.  
6-122-81 Hwy. 122 and Truscott, (4) 150-watt keep right signs on pedestal.  
6-7-82 Hwy. 7 and 2nd line, (4) 150-watt keep right signs on pedestal.  
6-10-83 Hwy. 10 and Base Line, (2) 150-watt keep right signs on pedestal.  
6-10-84 Hwy. 10, 1 mi. N. of Hwy. 401, (1) 6' fluorescent fixture.  
6-2-85 Hwy. 2 and Gardiner Expressway, (2) Cantilever, (4) 6' fluorescent fixtures.  
6-401-86 Hwy. 401 and Kipling, (2) 6' fluorescent fixtures.  
Contract 66-42 Hwy. 401 and Warden Ave and Victoria Pk., (4) 6' fluorescent fixtures.  
(22) 4' fluorescent fixtures, (9) Cantilevers.  
Contract 65-55 Hwy. 401 and Weston Rd., (4) Cantilevers, (4) 8' fluorescent fixtures,  
(2) 4' fluorescent fixtures.  
Contract 65-131 Hwy. 401 and Bayview, (4) Cantilevers, (4) 6' fluorescent fixtures,  
(4) 4' fluorescent fixtures.

## DISTRICT 7 — PORT HOPE

7-15-2 Hwy. 7 and Bayshore, (1) 150-watt incandescent fixture.  
7-15-3 Hwy. 7 and Naniamo Drive, (1) 150-watt incandescent fixture.  
7-401-8 Hwy. 401 eastbound lane, Bennett Rd., (4) 6' fluorescent fixtures.  
7-7-10 Hwy. 7 and Bayshore, (1) 150-watt incandescent fixture.

## DISTRICT 8 — KINGSTON

8-401-4 Hwy. 401 two lane section, Gananoque, (1) 6' fluorescent fixture.  
8-137-6 Hwy. 137 southbound at north limits of Hwy. 2S (Old 401) and 137 Inter  
change, (1) fluorescent fixture.  
8-137-7 Hwy. 137 at Jct. of 2S (Old 401) north of Thousand Island Bridge,  
(1) fluorescent fixture.

## DISTRICT 9 — OTTAWA

9-17-13 Hwy. 17, Blair Rd., Ogilvie Rd. and Skead Rd.,  
(1) 150-watt incandescent fixture.

## DISTRICT 11 — HUNTSVILLE

11-69-103-5 Hwys. 69 and 103, (8) 4' fluorescent fixtures.

## DISTRICT 13 — NORTH BAY

13-11-4 Hwy. 17, North Bay By-Pass Jct. of Hwy. 11, (1) 8' fluorescent fixture.  
13-123-5 Hwy. 123 at Jct. of Airport Rd., (1) 8' fluorescent fixture.

## DISTRICT 19 — FORT WILLIAM

19-130-3 Hwy. 130 and Lakehead Expressway, (4) Baselight signs.  
19-0-4 Lakehead Expressway and John St., (2) Baselight signs.  
19-11A-5 Hwy. 11A and Lakehead Expressway, (1) Baselight sign.

**FLASHING BEACONS****Installation Put Into Operation****April 1, 1967 — March 31, 1968****DISTRICT 1 — CHATHAM**

- 1-2-44 Hwy. 2 at Jefferson Blvd. E., Windsor, (1) overhead flasher.
- 1-402-45 Jct. Hwy. 402 at Murphy Rd., (8) amber flasher signals, (1) red on stop sign.
- 1-7-46 Hwy. 7 east of Warwick, (1) amber flasher signal.
- 1-7-47 Hwy. 7 west of Warwick, (1) amber flasher signal.

**DISTRICT 2 — LONDON**

- 2-4-22 Hwys. 4 and 7 Elginfield, (1) red flasher signal.
- 2-22-81-46 Hwy. 81 and Hwy. 22, (1) overhead flasher.
- 2-126-47 Hwy. 126 and County Rd. 37A Middlesex, (1) red on stop sign.
- 2-4-54 Hwy. 4, 1½ miles south of Hwy. 401, (1) amber flasher signal.

**DISTRICT 3 — STRATFORD**

- 3-83-10 Hwy. 83 west of Exeter, (1) amber flasher signal.
- 3-7-19-30 Jct. Hwy. 7 and 19, (1) red flasher on stop sign.
- 3-23-31 Hwy. 23 north of Monkton, (1) amber flasher signal.
- 3-86-32 Hwy. 86, Wingham, (1) amber flasher signal.

**DISTRICT 4 — HAMILTON**

- 4-8-15 Hwy. 8 at King St., Stoney Cr., (2) amber flasher signals.
- 4-Q.E.W.-125 Q.E.W. and 7th Line, north east corner, (1) amber flasher signal.
- 4-2-126 Hwy. 2 bridge over Grand River, Paris, (2) amber flasher signals.

**DISTRICT 5 — OWEN SOUND**

- 5-89-6 Hwy. 27 and 89, (1) red flasher on Hwy. 89, (1) amber on Hwy. 27.
- 5-26-19 Hwy. 26 and Co. Rd. 7, Brock's Beach, (1) red stop sign.
- 5-26-27-43 Hwy. 26 and 27, (4) amber flasher signals.

**DISTRICT 6 — TORONTO**

- 6-Q.E.W.-2 Q.E.W. west of Hwy. 27, (4) amber flasher signals.
- 6-122-107 Hwy. 122 north and south of R.R. Overpass (2) sign lights, (2) amber flasher signals.
- 6-7-112 Hwy. 7 and 4th Line west of Hwy. 10, (3) amber flasher signals.
- 6-10-113 Hwy. 10, 2 miles north of Hwy. 401, (1) sign light, (1) amber flasher signal.
- 6-10-114 Hwy. 10, 2 miles south of Hwy. 401, (1) sign light, (1) amber flasher signal.
- 6-10-115 Hwy. 10, 1 mile north of Hwy. 401, (1) sign light, (1) amber flasher signal.

**DISTRICT 7 — PORT HOPE**

- 7-7-7B-53 Hwy. 7 and 7B Fowlers Corners, (1) red flasher on stop sign.
- 7-115-9 Hwy. 115 west of Jct. 115 and 28, (1) amber flasher signal.

**DISTRICT 8 — KINGSTON**

- 8-62-33 Hwy. 62 and 7 (Madoc By-Pass), (2) flashers on stop signs.
- 8-14-62-39 Hwy. 14 at Hastings Co. Rd. 5, Foxboro By-Pass, (2) flashers on stop signs.
- 8-7-41 Hwy. 7 (Madoc By-Pass) and Hastings Co. Rd. 12, (2) flashers on stop signs.



## DISTRICT 9 — OTTAWA

9-29-7	Hwy. 29, Pakenham, (1) amber flasher signal.
9-17-17	Hwy. 17, Queensway, Greens Cr. Area, (3) amber flasher signals.
9-43-31-18	Hwy. 43 Jct. Hwy. 31 south of Winchester, (1) red on stop sign.
9-17-7-15-21	Hwy. 17 at Hwy. 7 and 15, Ottawa, (2) amber flasher signals.
9-7-15-23	Hwy. 7 and 15, C.P.R. Subway, west of Bell's Corners, (2) amber flasher signals.
9-7-15-25	Hwy. 7 and 15 at Moodie Dr., (2) sign lights.
9-17-17-32	Hwy. 17 and Old 17, Plantagenet, (2) red on stop signs.
9-62-34	Hwy. 62 at the "B" Line, (2) red on stop signs.
9-2-7-15-35	Hwy. 7 and 15 Ottawa Queensway, (2) amber on detour signs.
9-60-17W-43	Hwy. 60 and 17W, (1) red on stop sign.
9-34-47	Hwy. 34 and Browns Corners, (1) amber flasher signal.
9-138-48	Hwy. 138, Cty Rd. 18, St. Andrews, (1) red and amber flasher.
9-7-49	Hwy. 7 and Bayshore, (1) sign light.
	Hwy. 7 R.R. overpass, (2) amber flasher signals.
9-7-50	Hwy. 7 and Naniamo, (1) sign light.
	Hwy. 17 W and 62, (2) red on stop signs.

## DISTRICT 14 — NEW LISKEARD

14-11-558-7	Hwys. 11 and 558 east and west of Hwy. 558, (1) red flasher on stop sign.
14-11B-65-8	Hwy. 11B westbound on Hwy. 65, (2) red flashers on stop sign.

## DISTRICT 18 — SAULT STE. MARIE

18-17-129-1	Hwy. 17 and 129 Thessalon, (1) red and amber flasher signal.
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**MATERIALS AND TESTING DIVISION****A. Rutka, P.Eng., Materials and Testing Engineer**

The Materials and Testing Division provides an engineering service to all engineering branches of the Department through the six Head Office sections and the five Regional Offices. These services consist of the testing and inspection of materials and manufacturing plants, laboratory and field evaluations of new materials and equipment, preparation of pavement and bridge foundation designs, technical guidance and supervision of quality control of materials and construction processes and the training of construction inspection staff.

The Materials and Testing Division assisted the Training Committee in presenting 19 courses on Soils, Asphalt and Concrete for the Construction and Municipal staff. In addition, 2-day Seminars dealing with Soils, Asphalt and Concrete were held in most Districts for the Maintenance, Municipal and Construction staff by the Regional Materials personnel. In view of the increased amount of prime and double surface work that is proposed in the future, a 4-day Seminar on surface treatments was held in each of the 5 Regions during the winter. Another airphoto interpretation course was presented for the Planning, Road Design and Materials and Testing Staff.

The following papers were presented to various technical associations during the year:

1. Case histories of poor durability of Concrete in Ontario Structures.
2. High strength concrete for the Willow Creek Bridge.
3. Stripping of Asphaltic Concrete Mixes — Observations and test procedures.

4. Unusual abutment movements at Underpass structures on the Macdonald-Cartier Freeway.
5. Current Specifications, Field Practices and Problems in Compaction.
6. Experience with automatically controlled pavers in Ontario.
7. Asbestos modified hot-mix waterproofing for bridge decks.

As the result of an analysis of pavement designs on a number of projects carried out by both Materials and Testing and Road Design staff, the Pavement Selection Committee approved of further use of deep strength asphalt pavements and the introduction of plain concrete pavement over cement treated bases with skewed dowelled joints of two feet in 12 feet and random joint spacing of 12, 13, 18 and 19 feet.

## PHYSICAL TESTING SECTION

**J. J. Casey, P.Eng., Principal Testing Engineer**

The physical testing of all materials used in highway construction and maintenance is undertaken at the central laboratory at Downsview, the Regional laboratories, and the temporary mobile laboratories. All development and acceptance testing is carried out in the central laboratory while most of the routine pre-engineering and quality control samples are tested in the Regional, Temporary and Mobile laboratories. The type and volume of tests performed during this fiscal year are indicated in Table I.

One hundred and seventy-six manufacturing plants were inspected to determine their compliance with Department specifications and 25 suppliers were checked to establish prequalifications. The number of tests performed on the various manufactured materials and metals at Downsview are listed in Table II.

The physical laboratory undertook the following special investigations:

### 1. *Alkali Carbonate Reaction*

The laboratory study was continued on concrete cores from structures in the Orillia-Huntsville area and where Uhtoff type of rock was used.

### 2. *Curing and Sealing Compounds*

The effect of various surface coatings on the durability of the concrete was studied. The tests indicated that while initial durability of the concrete benefits from many coatings, the products have little effect on the ultimate performance under freeze-thaw conditions.

### 3. *Durability of Exposed Concrete Bridge Decks*

A study was started to determine air void parameters using the microscopic linear transverse technique on cores removed from concrete bridge decks. Early tests indicate favourable air void systems with conventional construction techniques.

### 4. *Volume Change Characteristics of Concrete*

For the construction of long span structures where it is essential that the designed composite action between the reinforced slab and the steel beam is achieved, volume change laboratory studies were undertaken on various concrete materials. Tests indicate that concrete can be made to meet tight volume change requirements by careful selection of concrete materials.

**TABLE I**  
**Samples Tested in Regional and other Laboratories 1967-1968**

TEST	LONDON	REGIONAL AND MOBILE LABORATORIES				TEMPORARY LABORATORIES				PICTON
		TORONTO	KINGSTON	NORTH BAY	FT. WILLIAM	FT. FRANCES	OTTAWA	KITCHENER		
Soils .....	385	601	1,040	299	248	—	234	—	—	
Granular Subbase and Base courses .....	381	242	316	513	340	17	253	35	—	
Ice Control Sands .....	11	22	29	—	99	—	—	—	—	
Concrete Aggregate .....	125	573	103	25	46	—	27	65	45	
H.L. Aggregate .....	210	4,009	217	234	163	—	9	22	—	
Concrete Mix Designs .....	—	525	—	—	8	—	—	—	—	
Bituminous Mix Designs .....	65	83	51	30	34	3	—	—	—	
Bituminous Plant Checks* .....	909	1,036	647	663	1,294	90	—	—	—	
Extractions* .....	1,816	1,682	1,296	1,326	1,151	180	—	—	—	
Concrete Cylinders .....	2,433	9,879	1,689	868	1,416	—	1,342	1,475	712	
Concrete Beams .....	—	897	—	—	8	—	15	64	86	
Commercial Aggregate .....	—	821	—	—	—	—	—	—	—	
Bituminous Materials from Field .....	—	4,464	—	—	—	—	—	—	—	
Cement .....	—	278	—	—	—	—	—	—	—	
Chemical Admixtures .....	—	22	—	—	—	—	—	—	—	
Foundation Soils .....	—	7,200	—	—	—	—	—	—	—	

\* includes Regional Mobile Bituminous Labs.

5. *Neoprene Joint Seal*

A survey of the performance of large neoprene bridge seals was undertaken. Although the neoprene seal is more effective than most other joint sealing systems, it is apparent that many installations are not completely satisfactory.

6. *Stripping of Hot Mixes*

Sampling of Hot Mix Pavements in service continued in order to determine the effectiveness of the sand asphalt course placed on granular grades to reduce the stripping of asphalt from the aggregates of the lower binder courses.

7. *Flexure Test for Bituminous Concrete*

In conjunction with the Research Branch a flexure test was started on bituminous concrete specimens. This project is showing good promise.

8. *Transverse Cracking*

Sampling and laboratory testing was continued for the research into the problem of transverse cracking occurring in various areas of Ontario.

9. *Stabilization*

Granular and earth materials from different parts of Ontario were tested to determine the suitability to cement, asphalt and lime stabilization.

**TABLE II — Manufactured Products Tested**

PRODUCTS	NUMBER OF TESTS
Prestressing Wires and Cables .....	654
Steel Beam Guide Rails .....	46
Grader and Snow Plow Blades .....	39
Snow Plow Shoes and Points .....	24
Concrete Pipe .....	96
Catch Basins .....	230
Reinforcing Steel .....	24
Sign Posts .....	17
Sign Blanks .....	46
Sign Structures .....	20
Concrete Poles .....	11
Structural Steel and Welding .....	3
Corrugated Metal Pipe .....	81
Fencing .....	4
Shovel .....	1
Rubber Hose .....	7
Concrete Manholes .....	4
Joint Sealers .....	68
Lubricant Adhesives .....	15
Electrical Tape .....	18
	<hr/> 1,408

**CHEMICAL SECTION**

**A. C. Suter, P.Eng., Principal Chemical Engineer**

Laboratory tests and evaluations of a chemical nature were undertaken for a variety of samples during the 1967-68 fiscal year. A list of the materials tested and evaluations made are given in Table III.



In the continuing salt contamination study, two dome-type buildings to store sand and salt were erected. These buildings proved to be much more efficient over our present sheds in minimizing salt pollution. A bin-type structure which is cheaper to construct and easier for loading operations is to be tried this winter. A salt shed with a sliding roof to facilitate loading is also being considered before a standard is adopted by the Department.

The second and third series of tests were made on well waters from patrol yards throughout the Province. As a result, valuable information was obtained in finding the most suitable location for the patrol buildings where pollution is a major problem.

TABLE III

MATERIALS TESTED	NO. OF SAMPLES	EVALUATION (FIELD AND LAB.)
Antifreeze .....	4	Calcium Plumbate System
Bituminous .....	4	Safelite Reflective Sheeting
Cement .....	94	Chlorinated Rubber Primers
Aggregate (limestone, slag, etc.) .....	85	Zinc Rich Coatings
		Paints in Aerosol Dispenser
Concrete Admixture .....	13	Fluorescent Traffic Cones
Concrete Water .....	13	Winter Liners
Deodorants .....	3	Ducks, Tarpaulins
Dustlaying Solutions .....	62	Flags
Fuel Oil .....	7	Safety Helmets
Glass Beads .....	76	Rubber Boots
Herbicide .....	32	Jute Netting
Paint Brush .....	13	Warning Lanterns
Rock Belt .....	54	Fluorescent Fabrics
Soil .....	376	Luminaires
Steel .....	16	Blankets
Water .....	932	Fluorescent Sheeting
Paints		
Traffic .....	613	
Guide Rail .....	13	
Primer .....	64	
Sign .....	47	
Bridge .....	60	
Equipment and Miscellaneous .....	118	
	2,699	

## SOILS SECTION

G. A. Wrong, Principal Soils Engineer

This section maintains a close liaison with the Regional Soils staff, provides technical assistance on all soils problems, co-ordinates the pre-engineering soils investigations and provides an airphoto interpretation and geophysical investigational service to the Regions from Downsview.

During this fiscal year, 24 seismic investigations were carried out throughout the province to determine the bedrock elevation and soil stratigraphy in areas where conventional boring techniques were not feasible due to inaccessibility or the bouldery nature of the soil. These investigations covered approximately 40 miles of profiles throughout proposed cuts, at structure foundations, along a creek diversion and through potential granular sources.

Airphoto investigations were made on thirty-eight different projects for the purpose of locating construction materials and terrain mapping of the soils in inaccessible areas, locations and relocation studies, providing preliminary information as to the location of potential natural aggregate sources prior to detailed field investigations.

This section co-ordinates the soils training courses presented to the District Construction and Municipal personnel by the Regional Soils Staff at Downsview. Study kits in the form of detailed lecture notes were presented to all candidates to the Senior Municipal and Advanced Grade Inspectors Courses. Prior to the Airphoto Interpretation course mentioned above the "Course Notes" manual was revised and a second edition published.

## **MATERIALS SECTION**

**W. R. Bennett, P.Eng., Principal Materials Engineer**

The Materials Section provides technical assistance to the Regional Materials and Testing and District staff on all matters dealing with the use of aggregates and the quality control of asphalt and concrete mixes.

During the past year the aggregate group were primarily concerned with appraising new potential rock quarry and specific granular deposits for construction materials, providing technical assistance to aggregate producers and assisting other Government Departments in aggregate appraisal.

Further advances were made in the analysis of concrete quality control data by the computer. Extensive concrete pavement performance studies were made throughout the province from Windsor to Cornwall on Highway 401 and in Ottawa on the Queensway. More than one hundred bridge deck investigations were carried out to determine the condition of the concrete under the asphalt-surfaced decks.

The following special projects were conducted during this fiscal year:

### **1. *Mixing Time Study of Bituminous Mixes***

A mixing time study of the degree of particle coating in the bituminous concrete mix was conducted on about 15 different asphalt plants. This study was done primarily on batch plants but several continuous mix plants were also included.

### **2. *Penetration Drop Study***

An investigation was made of the hardening process of bituminous concrete with regard to the change in penetration and viscosity of the asphalt cement, from its original state before mixing to its final road-placed condition. The program involved six contracts and included 85/100, 150/200 and 300/400 penetration grade asphalt cements.

### **3. *Truck Box Lubricants***

Five different truck box lubricants were tried out on one contract with a view to finding an alternative to fuel oil as an asphalt mix release agent. The results of the study eliminated most of the tested lubricants either from an economic or a performance standpoint. Some encouragement was obtained from a soap and water solution and further tests are contemplated.

4. *Hot-mix Anti-stripping Additives*

Concern due to the severe stripping tendency of the asphalt cement from the aggregate in some asphaltic concrete pavements led to the establishment of a field trial program in which two different anti-stripping additives were incorporated into the hot mix. Trial sections containing additives were incorporated in four Hot Mix contracts. Field samples have been taken for testing from all four contracts. Additional samples will be taken over a number of years to evaluate the effectiveness of the additives.

**FOUNDATION SECTION**

**A. G. Stermac, P.Eng., Principal Foundation Engineer**

The principal activity of this Section during the past year was the investigation of structure foundations on King's Highways. In addition, site investigations of Municipal structures, stability investigations, Field tests and Instrumentations were also carried out from the Central Office at Downsview. Six investigations were given out to Private Soil Consultants since the work load could not be handled by the Foundation Section staff. Details of the foundation investigations and laboratory tests carried out are shown in Table IV.

**TABLE IV**  
**Foundation Investigations**

	SECTION	CONSULTANT
Structures .....	104	6
Structures for Municipalities .....	3	
Stability Investigations .....	5	
Fields Tests and Instrumentation .....	9	
Patrol Yards .....	—	—
	121	6

**Drilling**

Drilling in Soil .....	34,236 ft.	2,512 ft.
Drilling in Rock .....	2,385 ft.	261 ft.
Dynamic Cone Penetration .....	13,868 ft.	975 ft.

**Foundation Soil Tests**

Grain Size Distribution .....	1,129
Liquid and Plastic Limits .....	2,386
Natural Moisture Content .....	4,993
Density .....	31
Unconfined Compression .....	788
Unconsolidated Undrained Triaxial .....	454
Undrained Triaxial with Pore Pressure Measurements .....	23
Direct Shear (Shear Box) .....	2
Consolidation .....	96
Organic Content .....	203
Specific Gravity .....	5
Vane .....	199
	10,309



**OFFICE ENGINEER'S SECTION****Z. Katona, P.Eng., Office Engineer**

This section maintains an up-to-date inventory of all known sand, gravel, and quarry sources in Ontario; evaluates the suitability of these materials for various highway construction purposes; publishes "strip maps" detailing the location and suitability for each potential source on each contract. This Section also provides a drafting service for the division.

One hundred and one strip maps were prepared for contract tendering purposes.

The drafting work for the foundation reports included the preparation, checking, assembling 200 complete drawings and several charts, graphs etc.

One hundred and eighty-three soils design profiles were received from the Regional Offices, filed, up-dated and distributed for contract tendering purposes.

**Regional Offices**

T. J. Kovich, P.Eng.,	Regional Materials Engineer, Toronto
J. R. Roy, P.Eng.,	Regional Materials Engineer, London
J. E. Gruspier, P.Eng.,	Regional Materials Engineer, Kingston
E. R. Saint, P.Eng.,	Regional Materials Engineer, North Bay
F. Norman, P.Eng.,	Regional Materials Engineer, Fort William

The regional staff undertake pavement performance and frost heave surveys, detailed soils and granular investigations on King's Highways and some Municipal Roads for pre-engineering purposes, quality control of construction and maintenance, and routine laboratory testing for acceptance of construction and maintenance materials.

While the regional concrete and asphalt staff provide inspection and technical assistance to the district on a regular routine basis, the soil personnel visit construction and maintenance work on an as-required basis. Mobile and temporary laboratories are provided to the district by the regions to control the work in areas where construction is concentrated.

The volume of testing carried out in the regions is shown in Table I. The regional field activities and courses presented in the District are listed in Table V.

The following special projects were undertaken in the regions during the year:

1. Field trials of the mobile concrete volume batchers.
2. Field testing of concrete admixtures Pozzolith 100N and 100R.
3. The instrumentation (in conjunction with Queen's University) of three muskeg deposits to determine time-settlement relationships in the Kingston region.
4. Settlement plates were installed under high fills constructed over soft compressible soil on the Lakehead Expressway to check the predicted amount of settlement and to measure the total amount of consolidations.
5. Frost tapers were constructed at one styrofoam test section on Highway 69 south of Sudbury. Performance to date indicates that with suitable tapers, styrofoam can be used with confidence to correct local serious frost heaving



conditions. Several frost treatments with styrofoam have been designed and will be built during the next year.

**TABLE V**  
**Field Operations — Regions**

SOILS	LONDON	TORONTO	KINGSTON	NORTH BAY	FT. WILLIAM
Number of Design Reports Prepared .....	72	41	68	49	35
Borings — Number of miles investigated .....	158	126	229	199	145
Surveys — Frost heave and spring performance (miles) .....	1,170	552	1,066	782	500
Grading — Contracts inspected ....	39	51	31	23	21
<b>BITUMINOUS</b>					
Paving contracts inspected (miles)	269	257	129	189	183
<b>CONCRETE</b>					
Paving inspected (miles — 2 lane widths) .....	8.4	81	4	—	—
Structures inspected .....	32	49	31	21	9
District Seminar or courses held ..	3	1	—	5	2

## MUNICIPAL ROADS DIVISION

**C. R. Wilmot, P.Eng., Municipal Engineer**

The 1967 subsidizable expenditures by the municipalities increased by approximately \$6,183,000.00 over 1966 and by \$137,433,000.00 over 1958, as shown in the following table:

### EXPANSION OF AID TO MUNICIPALITIES (IN \$1,000's)

YEAR	TOTAL EXPENDITURES BY MUNICIPALITIES	SUBSIDIES UNDER THE HIGHWAY IMPROVEMENT ACT	DEVELOPMENT ROAD EXPENDITURES	TOTAL AID
1958 .....	\$108,620	\$ 54,025	\$ 6,927	\$ 60,952
1959 .....	124,391	62,362	7,880	70,242
1960 .....	140,438	70,444	8,135	78,759
1961 .....	142,010	71,542	7,786	79,328
1962 .....	151,686	76,231	7,718	83,949
1963 .....	173,693	88,041	11,109	99,150
1964 .....	198,155	97,300	14,455	111,755
1965 .....	206,544	102,656	17,073	119,729
1966 .....	239,870	117,387	18,334	135,721
1967 .....	246,053	122,968	19,988	142,956

## SUBSIDIES SECTION

**F. R. Marshall, P.Eng., Subsidies Engineer**

965 Municipalities and 45 Indian Reserves received subsidy under The Highway

Improvement Act for expenditures made in 1967. The aggregate amounts were as follows:

	ROAD MILEAGE	APPROVED APPROPRIATION	APPROVED EXPENDITURES	SUBSIDY
Metro Toronto:				
Roads .....	362.0	\$ 40,500,000	\$ 39,152,207	\$ 19,576,103
Subway .....	—	12,000,000	5,900,072	1,966,691
Counties* .....	9,192.0	55,056,600	51,057,147	28,019,302
Townships** .....	49,911.3	84,976,020	73,703,160	43,207,686
Urbans .....	10,602.7	105,968,121	76,240,278	30,197,776
TOTALS .....	70,068.0	\$298,500,741	\$246,052,864	\$122,967,558

\* Includes Suburban Commissions

\*\* Includes Boroughs, Improvement Districts and Indian Reserves

### METROPOLITAN TORONTO

(Part XII-A, The Highway Improvement Act)

(Municipality of Metropolitan Toronto Act)

An amendment to The Highway Improvement Act passed in 1963 authorized the payment of subsidy at the rate of 33 $\frac{1}{3}$  % on expenditures for subway right-of-way construction made on or after April 1st, 1964 on the Bloor-Danforth Subway and the extension of the Yonge Street Subway — expenditures approved and subsidies paid for this work since that date were as follows:

YEAR	APPROVED EXPENDITURE	SUBSIDY PAID
1964 .....	\$17,375,569	\$ 5,791,856
1965 .....	10,402,103	3,467,367
1966 .....	17,506,084	5,835,361
1967 .....	5,900,072	1,966,691
TOTALS .....	\$51,183,828	\$17,061,275

Under the Municipality of Metropolitan Toronto Act, the Municipality claimed subsidy for the year on the following Expenditures.

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted) .....	\$30,852,530	\$4,692,534	\$35,545,064
Bridges and Culverts .....	500,000	291,878	791,878
Winter Control .....	—	2,815,265	2,815,265
TOTAL APPROVED EXPENDITURES .....	\$31,352,530	\$7,799,677	\$39,152,207

The following works were completed in 1967.

Structures .....	4
New Roads (Don Valley Pkwy.; Leslie St. Div.; Pottery Rd. Diversion) .....	1.68 miles
Existing Roads Reconstructed .....	0.72 miles
Existing Roads Reconstructed and Widened .....	2.96 miles
Resurfacing .....	13.80 miles
Intersection Improvements .....	6 miles
Bridges and Subways Painted .....	4
Bridges Repaired .....	3

## COUNTY ROADS

### (Part VII, The Highway Improvement Act)

The 1967 Expenditures on County and Suburban Roads showed an increase over 1966 figures of more than \$5,650,000 or a percentage increase of approximately 12%. Construction Expenditures increased by 16% and Maintenance Expenditures by 5%. Winter Control Expenditures showed an increase of approximately \$1,115,000.

A breakdown of the 1967 Expenditures follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted) .....	\$27,790,782	\$10,882,249	\$38,673,031
Bridges and Culverts .....	7,917,581	384,848	8,302,429
Winter Control .....	—	4,081,687	4,081,687
<b>TOTAL APPROVED EXPENDITURES .....</b>	<b>\$35,708,363</b>	<b>\$15,348,784</b>	<b>\$51,057,147</b>

Some understanding of the magnitude of the work represented by these figures can be gained from the following summary of the work performed by the counties and Suburban Commissions.

#### CONSTRUCTION

1. Roads:  
439.4 miles completed at a total average cost of \$70,882 per mile
2. Bridges and Culverts:
  - (a) Bridges (20' span and over)  
69 bridges completed at a total average cost of \$25.23 per sq. ft of deck area.
  - (b) Structures (under 20' span)  
Total number completed ..... 271
  - (c) Pipe Culverts installed ..... 3,723

MAINTENANCE OPERATION	MILES MAINTAINED	AVERAGE DIRECT COST PER MILE
1. Roadside Maintenance .....	9,014	\$ 168
2. Hard Top Maintenance .....	6,458	555
3. Loose Top Maintenance .....	2,556	1,036
4. Winter Control .....	9,014	398
5. Safety Devices .....	9,014	89
6. Bridge and Culvert Maintenance .....	8,694	46

The above maintenance operations are defined as follows:

1. *Roadside Maintenance* — includes shoulder and ditch maintenance, catch-basin maintenance, storm sewer maintenance, curb and gutter maintenance, drainage assessments, weed and brush cutting and spraying, tree planting, isolated pole relocations, sodding and seeding of erosion areas and other incidental maintenance operations not included elsewhere.
2. *Hard Top Maintenance* — includes all work on bituminous and concrete surfaces.
3. *Loose Top Maintenance* — includes all work on gravel and stone surfaces such as dragging, application of prime or calcium, oiling, gravelling and spray patching on prime surfaces.

4. *Winter Control* — includes snow plowing, snow removal, sanding, salting, snow fence and spring clean-up.
5. *Safety Device* — includes signs, guide rail zone painting and railway crossing protection.
6. *Bridge and Culvert Maintenance* — includes all repairs to bridge and culverts.

### COUNTY SUBURBAN ROADS

(Part VIII, The Highway Improvement Act)

Thirty-five cities and separated towns in the Province have joined their neighbouring counties to form Suburban Roads Commissions. These Commissions have assumed portions of the county road systems of special interest to the cities and separated towns. Their 1967 mileages, expenditures and government aid are shown below.

COUNTY	SUBURBAN ROAD COMMISSION	MILEAGE	APPROVED EXPENDITURE	GOVERNMENT SUBSIDY
Brant .....	Brantford .....	43.5	231,771	118,611
Carleton .....	Ottawa .....	138.0	1,237,427	678,983
	Eastview .....	2.6	160,570	80,562
Elgin .....	St. Thomas .....	19.0	43,352	23,386
Essex .....	Windsor .....	117.9	642,849	339,486
Frontenac .....	Kingston .....	22.5	175,817	87,909
Grey .....	Owen Sound .....	24.8	98,957	50,622
Hastings .....	Belleville .....	18.7	91,884	47,164
Kent .....	Chatham .....	31.5	117,381	61,511
Lambton .....	Sarnia .....	26.3	200,106	100,261
Lanark .....	Smiths Falls .....	11.0	15,845	7,962
L & G .....	Brockville .....	17.6	66,478	33,392
	Gananoque .....	6.7	8,335	4,550
	Prescott .....	2.9	14,585	7,298
	Smiths Falls .....	2.5	3,230	1,615
Lincoln .....	St. Catharines .....	52.8	452,386	228,100
Middlesex .....	London .....	67.6	1,035,508	673,472
N & D .....	Trenton .....	6.8	17,911	9,025
Ontario .....	Oshawa .....	38.6	314,919	157,875
Oxford .....	Ingersoll .....	7.3	58,911	30,954
	Woodstock .....	8.3	104,188	52,907
Perth .....	St. Marys .....	6.0	13,596	6,798
	Stratford .....	23.1	76,002	41,224
Peterborough .....	Peterborough .....	27.6	229,754	120,489
Simcoe .....	Barrie .....	20.1	75,988	42,697
S. D. & G. ....	Cornwall .....	40.0	194,112	114,063
Waterloo .....	Galt .....	33.9	126,077	64,777
	Kitchener .....	60.1	335,966	173,956
	Waterloo .....	23.0	133,164	77,020
Welland .....	Niagara Falls .....	26.8	467,527	290,678
	Port Colborne .....	6.4	73,686	39,645
	Welland .....	17.2	171,069	86,945
Wellington .....	Guelph .....	37.9	236,117	123,564
Wentworth .....	Hamilton .....	165.2	1,361,035	693,152
York .....	Toronto-York .....	195.2	4,352,326	2,231,977
TOTALS .....		1,349.4	12,938,829	6,902,630





showed an increase over 1966 expenditures of approximately \$4,427,000 with a corresponding increase of Government Subsidy of approximately \$1,847,000.

A breakdown of the 1967 expenditures follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted) .....	\$39,773,770	\$21,985,137	\$61,758,907
Bridges and Culverts .....	2,720,611	716,602	3,437,213
Winter Control .....	—	11,044,158	11,044,158
<b>TOTAL APPROVED EXPENDITURES .....</b>	<b>\$42,494,381</b>	<b>\$33,745,897</b>	<b>\$76,240,278</b>

A chronological summary of urban expenditures and provincial aid, and a table of street mileages by type of surface is included in the appendices.

## DIRECT EXPENDITURES SECTION

**P. D. Patterson, P.Eng., Direct Expenditures Engineer**

### DEVELOPMENT ROADS

*(Part XI, The Highway Improvement Act)*

Under the County Road Program 1965-69, assistance to county road systems in the form of development roads flows according to the way individual counties earn entitlement to such assistance. At the end of the fiscal year, approximately 770 miles of county roads were or had been, the subject of development road designations as part of the County Road Program.

Townships and towns and villages in the territorial districts continued to benefit from development road assistance during the fiscal year.

\$19,988,286 was spent on 204 development road designations applying to 1,110.5 miles of roads under the jurisdiction of eligible municipalities. During the fiscal year 34 projects covering 217 miles of roads were completed and 45 new designations on 208 miles of road were made.

Locations, mileages and expenditures on development roads are listed in the appendices.

### ROADS IN TERRITORY WITHOUT MUNICIPAL ORGANIZATION

*(Part XII, The Highway Improvement Act)*

Assistance to Local Roads Boards, Statute Labour Boards and groups of settlers is rendered under this Part of the Act.

The amount of contribution to Statute Labour Boards was at least equivalent to the value of the statute labour. Local Roads Boards benefit from a contribution of twice the amount of the local contribution which is derived from taxes levied on the assessed value of the land in the local roads area. During the year 125 Local Roads Boards were operating and 32 applications for new boards were processed.

The distribution of aid by districts is listed in the following table:

**SUMMARY OF UNINCORPORATED TOWNSHIPS  
EXPENDITURES IN THE FISCAL YEAR 1967-68**

MUNICIPAL DISTRICTS	VALUE OF		TOTAL VALUE OF WORK PERFORMED	PERCENTAGE OF AID BY DEPARTMENT
	STATUTE LABOUR, LOCAL ROADS OR OTHER WORK PERFORMED	DIRECT EXPENDITURE ON ROADS BY DEPARTMENT		
5 Muskoka .....	\$ 16,500	\$ 14,426	\$ 30,926	47
10 Nipissing .....	3,936	11,590	15,526	75
11 Huntsville and Parry Sound .....	61,547	150,935	212,482	71
13 Nipissing and Parry Sound .....	130,471	298,424	428,895	70
14 Temiskaming and Cochrane South .....	85,451	112,977	198,428	57
16 Cochrane North .....	53,711	199,389	253,100	79
17 Sudbury, Pt. Algoma, Pt. Parry Sound and Pt. Manitoulin .....	106,573	325,891	432,464	75
18 Algoma .....	31,644	153,529	185,173	83
19 Thunder Bay .....	81,432	287,677	369,109	78
20 Kenora and Rainy River .....	73,578	113,735	187,313	61
TOTALS .....	\$644,843	\$1,668,573	\$2,313,416	72

**PROGRAM STUDIES SECTION**

**R. D. Martell, P.Eng., Program Studies Engineer**

1. *Township Program Studies*

During the fiscal year, work was carried out on 11 Programming Studies. Three of these studies were completed and the reports published, namely:

Bayham                      Onondaga                      Vaughan

The remaining eight studies are being carried out in the following Townships and are in various stages of completion:

Clarke  
Cornwall  
Darlington  
Dover  
Esquesing  
King  
Morley  
Pickering

2. *Municipal Roads and Services Programming Studies*

Two pilot studies to test the methodology developed by the methods committee were undertaken in the Town of Port Hope and the Township of Saltfleet. Work on these studies is in the early stages and it is hoped that the bulk of the needs data will be collected and analysed during the fiscal year 1968-69.

3. *County Roads Needs Studies*

The studies of desirable County Roads in urban areas undertaken in the County of Carleton and the Town of Paris were completed and, the reports published.

Steps were taken to update the 1964 County Roads Needs Studies for the 1970-1974 programming period. Letters were sent to the various counties in the

province inviting their participation in carrying out this up-dating and it is expected that study co-ordinating committees will be formed early in fiscal year 1968-69. Traffic counting is being carried out by the Department of Highways and was started in late November. The studies will be completed early in 1970 and the Needs data developed will be used for programming and budgeting purposes for the 1970-74 programming period.

**PLAN APPROVALS SECTION**

**B. R. Heavysege, P.Eng., Plans Approval Engineer**

The plans approved during the year were as follows:

Development Roads — 55 plans .....	220 miles
By-law Construction — 160 plans .....	223 miles
TOTAL — 215 plans .....	443 miles

There was a reduction in the number of Plans and mileage of road designed compared to 1966 due to more urban work being undertaken which involves shorter jobs and higher costs. Also, there was a slight reduction in new development road designations because the county road program is now well advanced.

Standards of plans and contract documents continue to improve and a satisfactory degree of uniformity is being achieved. Development roads are being designed and supervised by many different firms of consulting engineers and it has required much time and effort to achieve uniform plans, documents and methods of supervision.

The high level of pre-engineering and supervision is reflected in the improved quality of municipal road construction.



**DISTRICT No. 1 — CHATHAM****F. C. Brown, P.Eng., District Engineer****CONSTRUCTION**

During 1967 further progress was made in the elimination of grade crossings on the Macdonald-Cartier Freeway. Four underpasses were brought into use, two in Maidstone Township and two in Sandwich South Township. Work was effectively completed on Interchange 4 (Essex County Road 25) and it was opened to traffic. The decks of these structures were finished with a deck finishing machine, asphalt surfacing being omitted. This was the District's first experience with machine finishing; the results were reasonably satisfactory.

Between Interchange 4 and Interchange 8 at Highway 2 west of Tilbury the Macdonald-Cartier Freeway was surfaced with a  $\frac{3}{4}$  inch dense graded bituminous hot mix material thus effectively completing the resurfacing of the highway from Windsor to Tilbury. Bridge decks on existing structures on the Macdonald-Cartier Freeway between Windsor and Tilbury were stripped of the old asphalt surface, repaired, waterproofed and resurfaced with a modified hot mix H.L. 1 incorporating asbestos fibre.

On Highway 3, reconstruction was completed from Port Crewe westerly to Stevenson Road. Six inches of deep asphalt was used over existing concrete, it being the first time the District had used this type of construction.

On Highway 402 in Sarnia, construction was started on the Murphy Road Underpass at the east city limits.

On Highway 21 from Highway 7 to Forest the old concrete road was covered with granular material and partly paved as part of general reconstruction on this section of highway.

**MAINTENANCE**

Normal summer and winter maintenance operations were carried out in the District during 1967-68. Three hot mix patching contracts and one crushed gravel shouldering contract were carried out. A tree and stump removal contract accounted for the removal of 40 trees and 1,179 stumps. The District Forestry Crew removed 729 trees and planted 2,312 new trees. Seven bridges were painted by contract. One salt shed was constructed by District Forces at the Comber Patrol Yard and a new 5-bay metal patrol garage was completed at the Oil City Patrol Yard. 5,667 signs were erected or replaced by the District Sign Shop. The Zone Painting Crew covered 1,107 miles, using 7,372 gallons of paint. The Electrical and Bridge Crews experienced a busy year. Under a day labour project the Kettle Point curve approximately 4 miles north of Forest on Highway 21, was improved by means of the construction of by-pass and right turn lanes. Generally speaking our winter was on a par with the previous year. Both salt and sand usage in 1967-68 was down considerably from 1966-67; 7,051 tons of salt were placed versus 10,691 tons and 5,859 tons of sand placed versus 11,918 tons. This decrease in the use of salt and sand appears to be the result of recommendations made by the Maintenance Management Section with regard to the calibration of our power sanders for salt and sand applications.

Two major floods each approximating a 20 year storm intensity occurred on December 21, 1967 and February 2, 1968. All affected culverts and bridges in the District withstood the test, however, general weaknesses were pinpointed and repairs will be effected on a priority basis as soon as possible. Gabion baskets installed in the summer of 1967 by Day Labour Forces adjacent to the abutments of the White Ash Creek bridge on Highway 21 south of Thamesville, appeared to protect this structure from serious flood damage.

Automatic Signals at Railway Crossings

Hwy. No.	Ry. Name Initials	Location	Type of Signal
21	Pen. Cen.	Lot 12, Concession 9, Howard Township, Kent County .....	2 flashing lights, 1 bell, 2 gates
98	Pen Cen.	Lot 9, Concession South of Middle Road, Rochester Township, Essex County .....	2 flashing lights, 1 bell, 2 gates

Bituminous Hot Mix Pavement

Hwy. No.	Location	Miles Compl.	Year Begun	This Fiscal Year Miles Compl.	Tons Placed
3	From 14.6 miles west of Blenheim west limits westerly to Stevenson Road .....	4.60	1967	4.60	27,914.18 <sup>1</sup>
21	From Highway 7 northerly to Forest .....	2.00	1967	2.00	6,103.00
21	From Highway 82 northerly to Grand Bend south limits .....	8.90	1967	8.90	11,302.84
80	From Highway 21 westerly to Brigden ....	7.60	1967	7.60	11,887.90
401	Interchange 4, Essex County Road 25, 8.9 miles east of Highway 98 .....	0.80	1966	0.39	4,002.00
401	Maidstone Township Road Concession VII Underpass 7.1 miles east of Highway 98 .....	0.43	1966	0.43	686.48
401	Maidstone Township Road Concession IX Underpass, 5.4 miles east of Highway 98 .....	0.40	1966	0.40	633.68
401	Sandwich South Township Road Concession X Underpass, 25.2 miles west of the junction of Highway 2, Tilbury .....	0.47	1966	0.47	726.08
401	Sandwich South Township Road Concession VIII Underpass, 27.0 miles west of Highway 2, Tilbury .....	0.38	1966	0.38	594.08
402	Murphy Road Underpass at Sarnia east limits .....	0.36	1967	Nil	524.00 <sup>2</sup>
TOTAL .....		25.94		25.17	64,374.24

<sup>1</sup>Deep Strength Asphalt  
<sup>2</sup>Detour Paved

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Tons Placed
	Various locations throughout the district .....	509

### Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	From Queen Street (Tilbury) easterly to Merlin Townline .....	6.80	1,614.86 <sup>1</sup>
3	From Essex to Oldcastle (Walker Road) .....	7.40	2,907.87 <sup>1</sup>
3	From Morpeth easterly to Kent-Elgin County Line .....	10.00	3,722.65 <sup>1</sup>
7	From Highways 7 and 21 to Highways 7 and 22 .....	8.00	1,781.00 <sup>1</sup>
79	From Highways 79 and 80 to Watford .....	9.10	839.36 <sup>1</sup>
98	From Charing Cross to Merlin .....	8.40	947.49 <sup>1</sup>
401	From County Road to Puce Interchange No. 4 easterly to the west junction of Highway 2 Interchange 8 Tilbury .....	16.89	20,459.08 <sup>2</sup>
TOTAL .....		66.59	32,272.31

<sup>1</sup>Patching various locations<sup>2</sup>Resurfacing

### Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC
401	Underpass at Maidstone Township Road, Concession VII, 7.1 miles east of Highway 98 (RCPCG) .....	1966	1967	1967 <sup>1</sup>
401	Underpass at Maidstone Township Road, Concession IX, 5.4 miles east of Highway 98 (RCPCG) .....	1966	1967	1967 <sup>2</sup>
401	Underpass at Essex County Road 25 to Puce Interchange 4 (RCPCG) .....	1967	1967	1967 <sup>3</sup>
401	Puce River widening of existing structure (RCRF) ....	1967	1967	1967 <sup>4</sup>
401	Underpass at Sandwich South Township Road, Concession X, 25.2 miles west of the junction of Highway 2 Tilbury (RCPCG) .....	1966	1967	1967 <sup>5</sup>
401	Underpass at Sandwich South Township Road, Concession VIII, 27.0 miles west of junction of Highway 2 Tilbury (RCPCG) .....	1966	1967	1967 <sup>6</sup>
402	Underpass at Murphy Road at City of Sarnia east limits (RCPCG) .....	1967	—	— <sup>7</sup>

RCRF — Reinforced Concrete Rigid Frame

RCPCG — Reinforced Concrete Prestressed Concrete Girders

<sup>1</sup>Length 220 feet, width 28 feet, clearance 15 feet 6 inches, 4 spans, 2 at 63 feet, 2 at 35 feet<sup>2</sup>Length 220 feet, width 28 feet, clearance 15 feet 6 inches, 4 spans, 2 at 63 feet, 2 at 35 feet<sup>3</sup>Length 239 feet 6 inches, width 30 feet, clearance 15 feet 6¾ inches, 4 spans, 2 at 71 feet 3 inches, 2 at 35 feet<sup>4</sup>Length 74 feet, width of extensions 9 feet, 1 span at 30 feet<sup>5</sup>Length 239 feet 6 inches, width 30 feet, clearance 15 feet 6 inches, 4 spans, 2 at 71 feet 3 inches, 2 at 35 feet<sup>6</sup>Length 232 feet, width 28 feet, clearance 15 feet 6 inches, 4 spans, 2 at 67 feet 6 inches, 2 at 35 feet<sup>7</sup>Length 301 feet 6 inches, width 54 feet, clearance 15 feet 5 inches, 5 spans, 1 at 80 feet, 2 at 62 feet 3 inches, 2 at 35 feet



Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	From Rochester-Tilbury North Township Line to Belle River Road	6.00	4,900.00 <sup>1</sup>
2	From Queen Street (Tilbury) easterly to Merlin Townline .....	6.80	1,253.54 <sup>2</sup>
3	From Essex to Oldcastle (Walker Road) .....	7.40	2,024.69 <sup>2</sup>
3	From Morpeth easterly to Kent-Elgin County Line .....	10.00	2,475.40 <sup>2</sup>
7	From Highways 7 and 21 to junction of Highways 7 and 22 .....	8.00	881.50 <sup>2</sup>
18	From Highways 18 and 18A (Malden Centre) to Amherstburg ..	6.60	4,000.00 <sup>1</sup>
79	From Highways 79 and 80 to Watford .....	9.10	638.33 <sup>2</sup>
98	From Charing Cross to Merlin .....	8.40	674.43 <sup>2</sup>
98	From Ruscomb to Walker Road .....	16.90	5,793.76 <sup>1</sup>
401	From County Road to Puce Interchange No. 4 easterly to the west junction of Highway 2 Interchange 8, Tilbury .....	16.89	23,008.75 <sup>1</sup>
TOTAL .....		96.09	45,650.40
Shouldering			
Shouldering at patching locations			

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	TONS PLACED
	Various locations by Patrols for shouldering .....	10,862



Hwy. 401 — Construction of Township Road Underpass 29 miles west of Tilbury.  
Photo 9703A—(Chatham)



## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. THIS YEAR
3	From 9.7 miles west of Blenheim west limits westerly 5.0 miles .....	5.00	1967	4%
3	From 14.60 miles west of Blenheim west limits westerly to Stevenson Road 4.60 miles including Port Alma patrol yard .....	4.60	1966	4.60
21	From Highway 7 northerly to Forest 7.93 miles including Department of Highways Warwick patrol yard on Highway 7 .....	7.93	1967	81%
401	Underpass at Maidstone Township road, Concession VII, 7.10 miles east of Highway 98 .....	0.43	1966	0.43
401	Underpass at Maidstone Township road, Concession IX, 5.40 miles east of Highway 98 .....	0.40	1966	0.40
401	Interchange 4 at Essex County Road 25, 8.90 miles east of Highway 98 .....	0.80	1966	82%
401	Underpass at Sandwich South Township Road, Concession X, 25.2 miles west of Highway 2 Tilbury ....	0.47	1966	0.47
401	Underpass at Sandwich South Township Road, Concession VIII 27.0 miles west of Highway 2 Tilbury	0.38	1966	0.38
402	Underpass at Murphy Road at City of Sarnia east limits	0.36	1967	31%
TOTALS .....		20.37		6.28

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
3	From 9.7 miles west of Blenheim west limits westerly 5.0 miles .....	5.00	1967	Nil	Nil	756.20
3	From 14.60 miles west of Blenheim west limits westerly to Stevenson Road 4.60 miles including Port Alma Patrol Yard .....	4.60	1966	Nil	4.60	57,066.65
21	From Highway 7 northerly to Forest 7.93 miles including Department of Highways Warwick Patrol Yard on Highway 7 .....	7.93	1967	Nil	7.00	269,611.40
401	Underpass at Maidstone Township Road Concession VII 7.10 miles east of Highway 98 .....	0.43	1966	0.09	0.34	5,517.22
401	Underpass at Maidstone Township Road Concession IX 5.40 miles east of Highway 98 .....	0.40	1966	0.08	0.32	5,517.22
401	Interchange 4 at Essex County Road 25 8.90 miles east of Highway 98	0.80	1966	Nil	0.80	58,117.00
401	Underpass at Sandwich South Township Road Concession X 25.2 miles west of Highway 2 Tilbury	0.47	1966	Nil	0.47	12,038.02
401	Underpass at Sandwich South Township Road Concession VIII 27.0 miles west of Highway 2 Tilbury	0.38	1966	Nil	0.38	9,894.88
402	Underpass at Murphy Road at City of Sarnia east limits .....	0.36	1967	Nil	Nil	2,503.30
TOTALS .....		20.37		0.17	13.91	421,021.85

## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
98	Patrol No. 2 .....	Frame	Salt Shed	1967	1967
21	Patrol No. 12, Oil City .....	Metal	Garage and Office	1967	1967

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	7	—	—
Calcium dust layer on gravel roads .....	Nil	—	—
Calcium for de-icing roads .....	Nil	—	—
Development roads built .....	Nil	—	—
Off-road parks maintained .....	8	—	—
Roads snowploughed and kept open, King's highways .....	22	—	756
Roads snowploughed and kept open, secondary highways .....	Nil	—	—
Roadside picnic places maintained .....	80	—	—
Routine maintenance, King's highways .....	22	—	756
Routine maintenance, secondary highways .....	Nil	—	—
Salt for de-icing roads (raw) .....	—	7,051	—
Salt in sand, stockpiled .....	—	592	—
Sand for winter maintenance .....	—	5,859	—
Scale houses maintained .....	3	—	—
Seeding by department's forces .....	(acres) 121	—	—
Shrubs received and planted this year .....	58	—	—
Signs erected or replaced .....	5,667	—	—
Snow fence erected, dismantled, stored .....	—	—	34
Snow hedges planted this year .....	Nil	—	—
Traffic lights installed this year .....	2	—	—
Weed control .....	—	—	835
Zone painting on King's highways .....	(gals.) —	—	1,107
Zone painting on secondary highways .....	(gals.) Nil	—	—

**DISTRICT No. 2 — LONDON****H. C. Dernier, P.Eng., District Engineer****CONSTRUCTION**

This Fiscal Year saw some reduction in Construction activity in this District, particularly in value of work done. The Fiscal Year brought the completion, or virtual completion, of six carry-over Contracts, and the completion of five new 1967 Contracts. Work also started on three new Contracts.

*Completed Work on Carry-over*

On Highways 3 and 24, Grading, Drainage, Granular Base and Paving of intersection for a distance of 0.54 miles.

On Highway 4, Top Course Paving from Highway 7 southerly 4.2 miles, including channelization. On Township Road connecting Highway 24 and 24A, Grading, Granular Base, Paving and Structure under L.E. & N. Railway for a distance of 2.10 miles. This Project was delayed due to strike by steel workers. Now complete except minor paving under Structure.

On Highway 59 at crossing of C.P.R. and Thames River, Grading, Granular Base, Paving and Structure, for a distance of 0.60 miles.

On Highway 126 at Pond Mills Road, Grading, Granular Base, Paving and Structure for a distance of 0.87 miles.

On Highway 401 at Interchange 18, Grading, Granular Base, Paving and Structure for a distance of 0.61 miles.

On Highway 7 at intersection of County Road 17, 1.3 miles south of Parkhill, Grading, Granular Base and Paving for a distance of 0.72 miles.

*New Work Completed in 1967*

On Highway 74 from Belmont to Nilestown, Grading, Granular Base, Paving and Waterproofing of Bridge over Highway 401.

On Highway 81 in Town of Strathroy, Bridge over Sydenham River and approaches, Grading, Granular Base, Paving and Structure for a distance of 0.31 miles.

On Highway 81 from Strathroy north limits to Highway 22 including channelization, Grading, Granular Base and deep strength paving for a distance of 2.70 miles.

On Highway 401 at Township Road to Lawrence Station — Underpass — Grading, Granular Base, Paving and Structure for a distance of 0.34 miles.

On Highway 401 at Bostwick Road — Underpass and Service Road — Grading, Granular Base, Paving and Structure for a distance of 1.38 miles.

*New Work Started in 1967 — Not Completed*

On Highway 401 at Interchange 18A, Grading, Granular Base, Paving and Structure. Top course paving and trimming remaining to be completed.

On Highway 4 from 0.3 miles north of Highway 401, southerly 6.2 miles, Grading, Granular Base, Paving, Structure and Hot Mix resurfacing.

On Highway 4 from 0.23 miles north of Highway 7, northerly 3.37 miles, Clearing, Grubbing, and Fencing.

Deep strength hot mix asphalt was specified on two contracts. No problems were encountered on the section of Highway 81 south of Highway 22.

On Highway 4 from 0.3 miles north of Highway 401 southerly, the section adjacent to the new Ford assembly plant, where deep strength asphalt was specified with a minimum depth of Granular. The Grading was not completed until mid-Autumn which happened to be in an exceptionally wet period. As a consequence, it was found to be impossible to consolidate the subgrade sufficiently to place the pavement as specified. In order to provide a usable road surface during the winter, granular material was placed on the widening and a minimum depth of cold mix asphalt was placed. The cold mix asphalt and sufficient depth of granular material will be removed and replaced by hot mix deep strength asphalt during the 1968 Construction Season.

Above were the only new techniques used or particular problems encountered.

#### MAINTENANCE

Routine Summer and Winter Maintenance was carried out on 750 miles of King's Highways. A new Patrol Headquarters building was constructed at Thamesford by Contract. Toilet buildings were constructed by District forces in the picnic areas adjacent to Service Centres W4 and W5.

*Among new techniques and procedures employed were the following:*

- (1) Some of the roadside mowing was done by Contract. This was found to be unsatisfactory due to the Contractor being unable to complete each phase of the work in the specified time.
- (2) Mowing standards, as prepared by Maintenance Management group were not made available until it was too late to completely implement them, nevertheless, partial implementation resulted in a saving of about \$9,000 as compared to the previous year.
- (3) Maintenance of picnic sites adjacent to Service Centres was carried out by Contract on W3 and W4, and was found quite satisfactory.
- (4) Interior roads and parking areas in the picnic sites adjacent to Service Centres W3 and W4 were treated with Department of Highways prime, with good results.
- (5) A crewing system, as designed by the Maintenance Management Group, for snowplows was employed almost exactly as indicated by the Computer Printout. The reduction in numbers of personnel required will almost certainly indicate some saving even when equated with increase in overtime payable.
- (6) All Loaders used in Winter Maintenance were hired operated equipment. This had the effect of reducing the D.H.O. operators required very considerably.
- (7) Variable speed . . . constant application rate, Hydraulic Sanders were used to a small extent on an experimental basis and were found satisfactory.

No new sections of Highway were opened to traffic.

All new Bridges noted elsewhere in this report, were either replacements or crossings over King's Highways.



## Automatic Signals at Railway Crossings

Hwy. No.	Ry. Name Initials	Location	Type of Signal
59	N.Y.C.	Four miles north of Delhi .....	Install 2 flashing light signals, 2 short arm gates and 1 bell

## Bituminous Hot Mix Pavement

Hwy. No.	Location	Miles Compl.	Year Begun	This Fiscal Year Miles Compl.	Tons Placed
3	Intersection of Highways 3 and 24 in Simcoe .....	0.54	1966	0.54	5,025
4	Highway 7 southerly 3.4 miles including channelization of Highways 4 and 7 ....	4.20	1966	4.20	9,788
7	Intersection of County Road 17, 1.3 miles south of Parkhill .....	0.72	1967	0.72	2,462
24T	Connection between old Highway 24 and new Highway 24 between Concession VIII and IX including underpass structure at L.E. & N. Railway .....	2.10	1966	2.10	6,167
59	Thames River Bridge and Canadian Pacific Railway grade separation, Devonshire Avenue northerly to James Street (Woodstock) .....	0.60	1966	0.60	2,673
74	From Belmont northerly to Nilestown .....	5.90	1967	5.90	20,555
81	Front Street in Town of Strathroy northerly 675 feet .....	0.31	1967	0.31	618
81	Strathroy north limits, northerly 2.70 miles to junction of Highways 22 and 81 .....	2.70	1967	2.70	12,781
81	From Highway 7 southerly 7.22 miles .....	Nil	1966	0.00	829
126	Second Concession Road (Pond Mills Road) one-half mile north of Highway 401 .....	0.87	1966	0.87	3,231
401	Interchange at Elgin County Road 14 to Iona (Interchange 18) .....	0.61	1966	0.61	5,068
401	Underpass at Township Road to Lawrence Station, 10.4 miles west of Highway 4 ..	0.34	1967	0.34	797
401	Bostwick Road underpass Concession VI, Lot 22, Township of Westminster, including Service Road between Bostwick Road and Road Allowance between Concession VI and V .....	1.38	1967	1.38	1,083
401	Interchange at Elgin County Road 29 to Shedden, Interchange 18A, 7.7 miles west of Highway 4 .....	0.63	1967	0.63	3,955
Vari- ous	Hot Mix Patching (H.L.3 Machine Laid) Highways 2, 3, 4, 7, 19, 22, 73, 74, 80, 401 .....	Nil	1967	Nil	9,298
TOTALS .....		20.90		20.90	84,330

<sup>1</sup>Top course only

## Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	This Fiscal Year Miles Compl.	Tons Placed
4	From 0.3 miles north of Highway 401 southerly 6.2 miles including Dodds Creek structure .....	3.1	8,400

## Bridges Built

Hwy. No.		YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
4	Dodds Creek structure 2.1 miles north of north junction of Highway 3 .....	1967	n/a	n/a	Concrete slab <sup>1</sup>
24T	L.E. and N. Railway subway 0.6 miles west of Waterford .....	1967	1967	n/a	Steel beam and slab <sup>2</sup>
59	Thames River Bridge and C.P.R. grade separation north limits of Woodstock .....	1966	1967	1967	Steel beam and slab <sup>3</sup>
81	Sydenham River Bridge, Town of Strathroy .....	1967	1967	1967	Prestressed slab <sup>4</sup>
126	Second Concession Road (Pond Mills Road) one half mile north of Highway 401 underpass .....	1966	1966	1967	Beam and slab <sup>5</sup>
401	Interchange 18 at Elgin County Road 14 to Iona .....	1967	1967	1967	Beam and slab <sup>6</sup>
401	Underpass at Township Road to Lawrence Station 10.4 miles west of Highway 4 .....	1967	1967	1967	Beam and slab <sup>7</sup>
401	Bostwick Road Underpass 1.5 miles east of Highway 4 .....	1967	1967	1967	Beam and slab <sup>8</sup>
401	Interchange 18A at Elgin County Road 20 to Shedden, 7.7 miles west of Highway 4 .....	1967	1967	1967	Beam and slab <sup>9</sup>

<sup>1</sup>Length 38 feet 3 inches, width 72 feet 4 inches, clearance 15 feet, one span 32 feet 11 inches, concrete slab

<sup>2</sup>Length 101 feet 3 inches, width 12 feet, clearance 19 feet 3 inches, 2 spans 29 feet 3 inches, 1 span 42 feet 9 inches, pre-stressed beam

<sup>3</sup>Length 508 feet, width 42 feet, clearance 23 feet 6 inches over tracks, 2 spans each 145 feet and two 90 feet, structural steel beam

<sup>4</sup>Length 115 feet, width 38 feet, clearance 15 feet, 2 spans 30 feet, 1 span 55 feet, pre-stressed slab

<sup>5</sup>Length 239 feet 6 inches, width 42 feet, clearance 15 feet 3 inches, 2 spans 64 feet 9 inches, 2 spans 32 feet 6 inches, pre-stressed beam

<sup>6</sup>Length 245 feet, width 34 feet 10 inches, clearance 15 feet 4 inches, 2 spans 40 feet, 2 spans 69 feet, pre-stressed beam

<sup>7</sup>Length 212 feet, width 35 feet, clearance 15 feet 6 inches, 2 spans 40 feet, 2 spans 62 feet, pre-stressed beam

<sup>8</sup>Length 224 feet 8 inches, width 32 feet, clearance 15 feet 9 inches, 2 spans 40 feet, 2 spans 61 feet, pre-stressed beam

<sup>9</sup>Length 245 feet, width 34 feet 10 inches, clearance 15 feet 2 inches, 2 spans 40 feet, 2 spans 69 feet, pre-stressed beam

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
3	Intersection of Highway 3 and 24 in Simcoe .....	0.54	2,547
4	Highway 7 southerly 3.4 miles including channelization of Highways 4 and 7 .....	4.20	16,472
4	From 0.3 miles north of Highway 401 southerly 6.2 miles including Dodds Creek structure .....	6.20	20,000
7	Intersection County Road 17, 1.3 miles south of Parkhill .....	0.72	8,390

24T	Connection to Highway 24 at Waterford from Highway 24A, Township Road between Concession VIII and IX, including underpass at L.E. & N. Railway .....	2.10	30,830
59	Thames River bridge and C.P.R. grade separation Devonshire Avenue northerly to James Street (Woodstock) .....	0.60	3,680
74	From Belmont northerly to Nilestown .....	5.90	104,054
81	Front Street in Town of Strathroy northerly 675 feet .....	0.31	782
81	Strathroy north limits, northerly 2.70 miles to Highways 22 and 81 .....	2.70	22,338
81	From Highway 7 southerly 7.22 miles .....	7.22	1,463
126	Second Concession (Pond Mills Road) one-half mile north of Highway 401 .....	0.87	2,846
401	Interchange at Elgin County Road 14 to Iona (Interchange 18) ....	0.61	22,991
401	Underpass at Township Road to Lawrence Station 10.4 miles west of Highway 4 .....	0.34	5,262
401	Bostwick Road underpass Concession VI, Lot 22 Township of Westminster, including Service Road between Bostwick Road and Road Allowance between Concession VI and V .....	1.38	11,522
401	Interchange at Elgin County Road 29 to Shedden, Interchange 18A, 7.7 miles west of Highway 4 .....	0.63	25,222
Various	Hot Mix Patching (H.L.3 Machine Laid) Highways 2, 3, 4, 7, 19, 22, 73, 74, 80, 401 .....	n/a	6,550
TOTALS .....		34.32	284,949

### Crushed Gravel and Stone on Roads by Department Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
4	From Highway 7 southerly 3.4 miles and junction of Highways 4 and 7 .....	3.40	127.5
4	From Highway 401 southerly .....	6.20	111.0
4	From 0.23 miles north of Highways 4 and 7, northerly 3.37 miles .....	3.37	31.5
7	From Highway 4 easterly 5.9 miles .....	5.90	84.0
74	From Belmont to Nilestown .....	5.90	100.5
81	From Highway 7 southerly 7.22 miles .....	7.22	234.0
81	Front Street, Strathroy .....	0.31	181.5
401	Interchange Number 18 .....	0.61	15.0
401	Bostwick Road Underpass (Township of Westminster) .....	1.38	97.5
401	7.7 miles west of Highway 4 .....	0.63	174.0
	D.H.O. Patrol Yard, one mile south of Thamesford .....	n/a	67.5
	Day Labour Fencing, various locations .....	n/a	9.0
	Research testing of guide rail and light standards; Old Fingal Airport .....	n/a	6.0
TOTALS .....		34.92	1,239.0

### Grading and Culverts

Hwy. No.	LOCATION	MILES		MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
		IN JOB	YEAR BEGUN		
4	From 0.3 miles north of Highway 401 southerly 6.2 miles including Dodds Creek Structure ....	6.20	1967	Nil	4.60
7	Intersection of County Road 17, 1.3 miles south of Parkhill .....	0.72	1967	Nil	0.72
24T	Connection to Highway 24 at Waterford from Highway 24A, Township Road between Concession VIII and IX including Underpass at L.E. & N. Railway .....	2.40	1966	1.00	1.10
59	Thames River Bridge and C.P.R. grade separation, Devonshire Avenue northerly to James Street (Woodstock) .....	0.60	1966	0.30	0.30

74	From Belmont northerly to Nilestown .....	5.90	1967	Nil	5.90
81	Front Street in Town of Strathroy, northerly 675 feet .....	0.31	1967	Nil	0.31
81	Strathroy north limits, northerly 2.70 miles to junction of Highways 22 and 81 .....	2.70	1967	Nil	2.70
401	Interchange at Elgin County Road 14 to Iona (Interchange 18) .....	0.61	1966	Nil	0.61
401	Underpass at Township Road to Lawrence Station, 10.4 miles west of Highway 4 .....	0.34	1967	Nil	0.34
401	Bostwick Road Underpass Concession VI, Lot 22, Township of Westminster, including Service Road between Bostwick Road Allowance between Concession VI and V ....	1.38	1967	Nil	1.38
401	Interchange at Elgin County Road 29 to Shedden — Interchange 18A, 7.7 miles west of Highway 4 .....	0.63	1967	Nil	0.63
TOTAL .....		21.79		1.30	18.59

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES	YEAR BEGUN	MILES	THIS FISCAL YEAR	TONS
		IN JOB		COMPL. PREVIOUS YEARS		
4	From 0.3 miles north of Highway 401 southerly 6.2 miles, including Dodds Creek structure .....	6.20	1967	Nil	4.60	16,112
7	Intersection of County Road 17, 1.3 miles south of Parkhill .....	0.72	1967	Nil	0.72	17,569
24T	Connection to Highway 24 at Waterford from Highway 24A Township Road between Concession VIII and IX, including Underpass at L.E. & N. Railway .....	2.40	1966	0.50	1.60	32,991
59	Thames River Bridge and C.P.R. grade separation, Devonshire Avenue northerly to James Street (Woodstock) .....	0.60	1966	0.10	0.50	15,200
74	From Belmont northerly to Niles-town .....	5.90	1967	Nil	5.90	129,319
81	Front Street in Town of Strathroy northerly 675 feet .....	0.31	1967	Nil	0.31	2,365
81	Strathroy North limits, northerly 2.70 miles to junction of Highways 22 and 81 .....	2.70	1967	Nil	2.70	19,385
401	Interchange at Elgin County Road 14 to Iona (Interchange 18) ....	0.61	1966	Nil	0.61	46,995
401	Underpass at Township Road to Lawrence Station, 10.4 miles west of Highway 4 .....	0.34	1967	Nil	0.34	5,467
401	Bostwick Road underpass Concession VI, Lot 22, Township of Westminster, including Service Road between Bostwick Road Allowance between Concession VI and V .....	1.38	1967	Nil	1.38	22,074
401	Interchange at Elgin County Road 29 to Shedden, Interchange 18A 7.7 miles west of Highway 4 .....	0.63	1967	Nil	0.63	47,393
TOTALS .....		21.79		0.60	19.29	355,270





Hwys. 3 and 24 — Pavement marking in town of Simcoe. Photo 9714A—(London)

New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
2	One mile east of Thamesford, Town- ship of North Oxford, County of Oxford .....	5 Bay Garage and Office	Patrol Building	1967	Feb., 1968
401	Approximately 2 miles west of Dutton Road, west side of High- way 401 — Picnic Area W.5 — adjacent to Service Centre .....	Ladies and Gentlemen Toilets	Picnic Area facilities	1967	1967
401	Approximately 2 miles west of Dutton Road, east side of High- way 401 — Picnic Area W.6 — adjacent to Service Centre .....	Ladies and Gentlemen Toilets	Picnic Area facilities	1967	1967

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	6	—	—
Calcium dust layer on gravel roads .....	Nil	—	—
Calcium for de-icing roads .....	Nil	—	—
Development roads built .....	Nil	—	—
Off-road parks maintained .....	13	—	—
Roads snowploughed and kept open, King's highways .....	21	—	751.6 2 lane Equiv.
Roads snowploughed and kept open, secondary highways .....	Nil	—	—
Roadside picnic places maintained .....	74	—	—
Routine maintenance, King's highways .....	21	—	751.6 2 lane Equiv.
Routine maintenance, secondary highways .....	Nil	—	—
Salt for de-icing roads (raw) .....	—	16,198	—
Salt in sand, stockpiled .....	—	1,357	—
Sand for winter maintenance .....	(cubic yards) 41,192	—	—
Scale houses maintained .....	2	—	—
Seeding by department's forces .....	(acres) 172	—	—
Shrubs received and planted this year .....	4,053	—	—
Signs erected or replaced .....	3,575	—	—
Snow fence erected, dismantled, stored .....	—	—	111.8
Snow hedges planted this year .....	—	—	1.2
Traffic lights installed this year .....	1	—	—
Weed control .....	(gals.) 1,643	—	1,559
Zone painting on King's highways .....	(gals.) 10,359	—	1,093
Zone painting on secondary highways .....	(gals.) Nil	—	—



Hwy. 402 — Proposed route from London to Sarnia — Map (London)



**DISTRICT No. 3 — STRATFORD****J. G. Tillcock, P.Eng., District Engineer****CONSTRUCTION**

During the 1967-68 Construction Season, four carry over Contracts and five new Contracts were completed. Work commenced on five Contracts, which will be carried over into the 1968-69 season.

A Contract for grading, drainage, granular base and hot mix paving was completed on Highway 23, from one mile south of Monkton, northerly 6.7 miles to County Road 6 at Newry. This work included curbs, gutters, sewers and pavement widening in the Villages, Monkton and Newry. Providing improved parking and free movement of Traffic.

The work of grading, drainage, granular base, hot mix paving and structure was completed on Highway Number 4, for 0.43 miles, Hanna Memorial Bridge, north branch of Maitland River in the Town of Wingham. The new concrete structure replaced a single lane steel truss bridge.

Grading, drainage, granular base and hot mix paving was completed on Highway 4, from 0.25 miles north of Exeter, northerly for 7.5 miles, including Department of Highways Patrol Yard improvements at Exeter, and placing storm sewers, curbs and gutters, and pavement widening on Highway 84 in the Village of Hensall.

A Contract for grading, paving, granular base and hot mix paving was completed on Highway 7, from 0.5 miles north of Stratford south limits, southerly for 9.5 miles.



Hwy. 86 — Wingham By-pass construction. Photo 9692—(Stratford)

Grading, drainage, granular base and hot mix paving was completed on Highways 89 and 10 in the Village of Shelburne. This work entailed street widening, sewers, curbs and gutters, providing much better parking facilities and free movement of Traffic.

A Contract for intersection improvement at the Junction of Highways 97 and 8 in the City of Galt has been completed, greatly improving the turning movements.

Grading, drainage, granular base and hot mix paving was completed on Highway 86, from 5.8 miles east of Elmira, easterly for 8.1 miles, including intersection improvement at the Junction of Highways 86 and 7.

Grading, drainage, granular base and hot mix paving was completed on Highway 7 and 8 from Stratford east limits to Shakespeare east limits, including curbs, gutters, sewers and pavement widening in the Village of Shakespeare.

Hot mix paving was completed on Highway 9, Orangeville, westerly for 10.1 miles.

Work of grading, drainage and structure on the Boyle Drain Structure and approaches, Highway 23, 2.5 miles north of Monkton, was completed except for paving and trimming. Structure was opened to traffic in December 1967. Contract will be completed early in 1968.

Work of grading, drainage, granular base course, hot mix paving and two structures over the Maitland River on Highway 86, (Wingham Diversion) east and west of Highway 4, was completed with the exception of top course paving and trimming.

The diversion was opened to traffic in December 1967, eliminating the use of old Highway 86 in the Town of Wingham connecting link, which had very poor alignment, grades and structures.

Grading, drainage, granular base, hot mix paving and structures Highway 7, St. Marys Diversion 11.07 miles, was awarded late in 1967 and is expected to be completed in 1968. This Contract calls for the use of cement stabilized granular.

Work commenced on grading, drainage, granular base and hot mix paving, from 6.5 miles south of Stratford, for 11.38 miles on Highway 7. Contract is expected to be completed during the 1968 season.

Work commenced on grading, drainage, granular base, hot mix paving and structures, (including pre-stressed box girders) from Newry to Listowel, Highway 23. This work includes curbs, gutters, sewers and pavement widening in Atwood and on Highway 86 connecting link in Listowel. Completion is expected in 1968 except work in Listowel which may not be completed until 1969.

Due to the abnormal amount of wet weather during the summer and early fall, the completion was delayed on several contracts.

## MAINTENANCE

Routine maintenance was carried out on 655 miles of King's Highways and 40 miles of Connecting Link, Ontario Hospital Roads, etc. The St. Marys Bypass, a narrow gravel road 10.1 miles long, was added to the total mileage of the District on April 1st, 1967. A contract for reconstruction was awarded last fall. A portion of the Kitchener-Waterloo Expressway on Highway 8 was also added to the District in



October, 1967. It is a four-lane, divided urban expressway extending from Fergus Avenue to Montgomery Road, a distance of 0.9 miles.

The District maintenance forces maintained 93 road side picnic sites and 12 off road parks. Hot mix patching, by contract, was carried out on Highway 24 between Guelph and Erin. There were also two contracts for shoulder gravel; one on Highway 87 between Wroxeter and Harriston and the other on Highway 21 south of Goderich.

The revised reporting system, recommended by Maintenance Management, was introduced in the District on April 1, 1967. Also, during the summer, formal patrol scheduling of routine maintenance operations was initiated on ten patrols.

A six bay, metal-clad patrol garage was constructed at Wingham. The new patrol yard at Guelph was partially developed and a new salt shed constructed.

The District forestry crew removed 1,165 dead and dangerous trees and 778 diseased elms. 2,690 coniferous trees and deciduous shrubs were planted as snow hedge on the Highways in the northern section of the District. In addition, there were also 4,895 deciduous trees planted on various Highways in the District. The crew seeded about 358 acres and applied chemical weed control to 671 miles of Highway. Soil sterilent for vegetation control at guide rails was applied to about 40 miles of guide rail. The crew also trimmed and thinned 16 miles of snow hedges on Highway 9 and Highway 86.

The District Sign Shop fabricated, erected or replaced 6,456 signs. This included identification signs at the intersection of all Township Roads with King's Highways. Also, all the County Road intersections with King's Highways in Huron County were re-signed.

The zone striping crew painted approximately 700 miles of Highway using 10,340 gallons of paint.

An Electrician was assigned to the District during the past year. His work included maintenance on buildings, electrical work on capital contracts and electrical work associated with signing and traffic control.

The District Bridge Crew performed extensive maintenance work on structures in the district. There were seven structure decks stripped, repaired, waterproofed and repaved. An experimental waterproofing treatment was applied to three structure decks.

The District Equipment Section has carried out extensive testing of paint applications on hydraulic sanding bodies. A specially designed blower unit for lowering snowbanks was tested in the district during the winter.

The Signs and Buildings Section issued the following permits: Buildings and Structures — 406; Encroachments — 49; Entrances — 238; Signs (new) — 175.

#### Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
89	C.P.R.	1.0 miles northeast of Harriston, level crossing ..	Flashers and bells

<sup>1</sup>Board Order Number 122094

<sup>2</sup>Work Order Number 66-33507

**Bituminous Hot Mix Pavement**

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
23	From one mile south of Monkton north- erly 6.70 miles to County Road No. 6 (Newry) .....	6.70	1966	6.70	11,055
4	Hanna Memorial Bridge, north branch of Maitland River (Town of Wingham) ..	0.43	1966	0.43	820
4 & 84	From 0.25 miles north of Exeter North Limits northerly 7.50 miles including Department of Highways, Ontario, Patrol Yard at Exeter .....	7.50	1966	7.50	34,200
7	From 0.50 miles north of Stratford South Limits southerly 5.90 miles .....	5.90	1966	5.90	22,975
89 & 10	Village of Shelburne .....	1.80	1967	1.80	9,710
97 & 8	Intersection of Highway 97 and Highway 8 at Galt .....	1.03	1967	1.03	8,113
86 & 7	From 5.80 miles east of Elmira easterly to Highway 7, 7.80 miles including chan- nelization at Highway 7 and Highway 86	8.11	1967	8.11	23,085
7 & 8	From Shakespeare East Limits westerly to Stratford East Limits .....	6.02	1967	6.02	20,635
4 & 86	Wingham diversion east and west of High- way 4 including two structures over Maitland River and the Wingham Patrol Yard development .....	1.83	1967	1.83	790
TOTALS .....		39.32		39.32	131,383

**Bituminous Prime on Gravel Roads**

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
25	Junction of Highways 24 and 25 to 5.50 miles south ..	5.50	16,835	695
TOTAL .....		5.50	16,835	695

**Bituminous Resurfacing of Old Pavement**

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			MILES COMPL.	TONS PLACED
6	Guelph South Limits to 4.50 miles south .....	4.50	4.50	1,838
24	Guelph North Limits to Erin .....	17.00	17.00	—
9	Orangeville Westerly .....	10.10	10.10	21,315
TOTALS .....			31.60	23,153

**Bituminous Surface Treatment**

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BITUMULS USED	TONS CHIPS USED
84	From Hensall to St. Joseph excluding Town Limits of Hensall .....	10.00	29,670	1,308
TOTALS .....		10.00	29,670	1,308

## Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
23	Maitland River Bridge — Boyle Drain, 2.5 miles north of Monkton .....	1967	1967	1967	Reinforced Concrete
86	Maitland River Bridge 0.2 miles west of Highway 4 .....	1967	1967	1967	Reinforced Concrete
86	Maitland River Overflow Bridge 0.3 miles west of Highway 4 .....	1967	1967	1967	Reinforced Concrete

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
87	From Harriston to 3 miles west of Wroxeter .....	3.00	19,327
4	Department of Highways, Ontario, Yard, 1.50 miles south of Wingham .....	—	5,002
21	Goderich to Bayfield .....	13.00	8,980
89	Department of Highways, Ontario, Yard at Harriston .....	—	7,502
9	Department of Highways, Ontario, Yard at Arthur .....	—	4,998
6	Guelph South Limits to 4.50 miles south .....	4.50	2,357
24	Guelph North Limits to Erin .....	17.00	
9	Orangeville West .....	10.10	21,814
	TOTALS .....	47.60	69,980

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	TONS PLACED
4	Shoulders .....	501.0
6	Shoulder .....	1,821.0
7	Shoulder .....	3,695.5
8	Shoulder .....	2,435.2
9	Shoulder .....	3,412.5
10	Shoulder .....	643.5
19	Shoulder .....	75.0
21	Shoulder .....	2,844.0
23	Shoulder .....	798.0
24	Shoulder .....	1,341.8
25	Surface .....	2,652.0
81	Shoulder .....	121.5
83	Shoulder .....	118.5
84	Shoulder .....	16.5
85	Shoulder .....	116.6
86	Shoulder .....	2,438.6
87	Shoulder .....	4.5
89	Shoulder .....	2,023.5
104	Shoulder .....	40.5
7	St. Marys By-Pass — Surface .....	1,975.5
	TOTAL .....	27,075.2

## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
4 & 84	From 0.25 miles north Exeter North Limits northerly 7.50 miles including Department of Highways, Ontario, Patrol Yard at Exeter. Contract No. 66-183 .....	7.50	1966	Nil	7.50
7	From 0.50 miles north of Stratford South Limits southerly 5.90 miles. Contract No. 66-223 .....	5.90	1966	Nil	5.90
89 & 10	Village of Shelburne. Contract No. 66-81 .....	1.80	1966	Nil	1.80
97 & 8	Intersection of Highway 97 and Highway 8 at Galt. Contract No. 66-148 .....	1.03	1967	Nil	1.03
86 & 7	From 5.80 miles east of Elmira easterly to Highway 7, 7.80 miles including channelization at Highway 86. Contract No. 66-266 ....	8.11	1967	Nil	8.11
23	Maitland River Bridge (Boyle Drain) 2.50 miles north of Monkton. Contract No. 67-45 .....	0.25	1967	Nil	0.25
4 & 86	Wingham Diversion east and west of Highway 4 including two structures over Maitland River and the Wingham Patrol Yard Development. Contract No. 67-48 .....	1.83	1967	Nil	1.83
TOTALS .....		26.42			26.42

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
4 & 84	From 0.25 miles north of Exeter North Limits northerly 7.50 miles including Department of Highways Patrol Yard at Exeter. Contract No. 66-183 .....	7.50	1966	7.50	333,885
7	From 0.50 miles north of Stratford South Limits southerly 5.90 miles. Contract No. 66-223 .....	5.90	1966	5.90	308,000
89 & 10	Village of Shelburne. Contract No. 66-81 ..	1.80	1966	1.80	86,725
97 & 8	Intersection fo Highway 97 and Highway 8 at Galt. Contract No. 66-148 .....	1.03	1967	1.03	56,550
86 & 7	From 5.80 miles east of Elmira easterly to Highway 7, 7.80 miles including channelization at Highway 7 and Highway 86. Contract No. 66-266 .....	8.11	1967	8.11	31,765
23	Maitland River Bridge (Boyle Drain) 2.50 miles north of Monkton. Contract No. 67-45 .....	0.25	1967	0.25	6,950
4 & 86	Wingham Diversion east and west of Highway 4 including two structures over Maitland River and the Wingham Patrol Yard Development. Contract No. 67-48 .....	1.83	1967	1.83	44,900
TOTALS .....		26.42		26.42	868,775

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
4	Six Bay Patrol Garage .....	Metal Clad	Patrol	1967	
7	Guelph East Limits .....	120A	Salt Shed	1967	1967



## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	3	—	—
Calcium dust layer on gravel roads .....	—	43	15
Calcium for de-icing roads .....	—	Nil	—
Calcium for de-icing roads .....	—	—	—
Development roads built .....	—	—	—
Off-road parks maintained .....	12	—	—
Roads snowploughed and kept open, King's highways .....	20	—	695
Roads snowploughed and kept open, secondary highways .....	—	—	Nil
Roadside picnic places maintained .....	93	—	—
Routine maintenance, King's highways .....	20	—	695
Routine maintenance, secondary highways .....	—	—	Nil
Salt for de-icing roads (raw) .....	—	16,500	—
Salt in sand, stockpiled .....	—	1,903	—
Sand for winter maintenance .....	26,816	—	—
Scale houses maintained .....	1	—	—
Seeding by department's forces .....	358	—	—
Shrubs received and planted this year .....	—	—	—
Signs erected or replaced .....	6,456	—	—
Snow fence erected, dismantled, stored .....	—	—	94.0
Snow hedges planted this year .. (Individual coniferous trees)	2,690	—	—
Traffic lights installed this year .....	1	—	—
Weed control .....	671	—	—
Zone painting on King's highways .....	10,340	—	—
Zone painting on secondary highways .....	Nil	—	—



Hwy. 7 — Paving east of Stratford. Photo 9690—(Stratford)

**DISTRICT No. 4 — HAMILTON****H. Greenland, P.Eng., District Engineer****CONSTRUCTION**

Grading on a mile and a half section of Highway 403 from the T.H. & B. railway in Hamilton to the Mohawk Road in Ancaster was completed. Meanwhile grading and structure work proceeded on the adjacent section from the Mohawk Road to Duff's Corners and a contract for the Railway Subway at the T.H. & B. railway was awarded. This structure will facilitate 8 sets of tracks.

Grading, drainage and paving of highways 3 and 6 in the Village of Jarvis began.



Hwy. 3—Reconstructed section west of Fort Erie. Photo 9544—(Hamilton)



Highway 24 from Brantford to the Norfolk County boundary was resurfaced preparatory to the transfer of this section to Brant County. Concrete paving was completed on New Highway 24 from Scotland to Highway 53. At Paris work continued on the Grand River Bridge with the completion of the substructure. Nearby resurfacing work on Highway 24 from Paris to Galt was almost completed.

Work on the Kitchener-Waterloo Expressway continued with the award of 3 more contracts: King St. to Frederick St., King St. to Homer Watson Blvd. and the Guelph St. structure.

Grading and base paving was completed on Highway 6 from Puslinch to Aberfoyle while farther south on this highway a clearing and grubbing contract to enable utility relocation was completed from Clappison's Corners northerly 5 miles.

Resurfacing was completed on Highway 25 from Highway 401 to Acton.

Traffic on the Burlington Bay Skyway was restricted to one lane traffic while deck repairs and resurfacing were completed during early Summer.

Reconstruction of Highway 8 from Highway 20 to Winona was started which included 4 lane construction through Stoney Creek. A channelization was built at the intersection of Highway 8 and the Welland Canal Service Road at St. Catharines. Additional safety was provided on the Q.E.W. from Burlington to Oakville by the installation of additional guide rail and by the removal of trees and other obstructions which existed within a critical distance of the travelled roadway.

Resurfacing on the Q.E.W. from Highway 405 to Lundy's Lane was completed while a contract for 5 miles of resurfacing was begun from Vineland to the Garden



Hwy. 58 — Construction of west entrance of Thorold Tunnel. Photo 8965—(Hamilton)

City Skyway. Work on the Q.E.W. — Ontario Street interchange in St. Catharines was completed.

Channelization improvements were made at the Q.E.W. extension and Stanley Ave. in Niagara Falls. Farther south a bridge deck replacement was completed carrying the southbound Q.E.W. traffic over the Michigan Central Railway, 5 miles north of Fort Erie.

Grading and paving of Highway 8 south of St. Davids in conjunction with the replacement of the C.N.R. Subway was completed. At Allanburg reconstruction of 1.8 miles of Highway 20 was also completed. Six miles of 4 lane construction on Highway 3 from Fort Erie westerly was finished while clearing and grubbing was performed on the next 6 miles west to Gasline.

The Thorold Tunnel construction continued with the contractor once more ahead of schedule. Construction of 1.25 miles of Highway 58 from Collier Road to the west portal of the tunnel was well advanced. Meanwhile work on a 4.8 mile section of Highway 58 from Highway 20 to the east approach to the tunnel was started.

In Niagara Falls building alterations were completed to the Rainbow Bridge Plaza. Nearby, the channelization of the Q.E.W. extension at Falls Ave. was completed as well as a car park adjacent to the Rainbow Bridge Approach.

Other minor projects performed by means of invitation bid contracts were: the channelization at Glendale Avenue and Highway 406 in St. Catharines, a truck parking lane at the Burlington Bay Skyway Plaza, Overhead sign supports at the Q.E.W. and Ontario St. interchange in St. Catharines and at the approach to the Rainbow Bridge in Niagara Falls.

#### MAINTENANCE:

There were 885 miles of King's Highways maintained in the fiscal year 1967-68. This mileage is made up of 853 equivalent two lane miles of Highway and 32 miles of connecting links maintained by D.H.O. forces.

Two bridges were painted by contract, the Twelve Mile Creek Bridge on Highway No. 5 and the C.N.R. Overhead on Highway No. 122.

There were approximately 15,250 gallons of zone paint applied by the District's two Zone Painting crews. This painting includes the yellow-edge-of-pavement lines along the freeways in the District, which application has helped diminish accidents during foggy and wet driving conditions.

Traffic lights were installed at 12 new locations.

There were three asphalt patching contracts carried out and a total of 24,446 tons of hot mix asphalt was placed. District forces placed an additional 4,400 tons of asphalt.

Surface treatment was carried out by contract on 16 miles of highway.

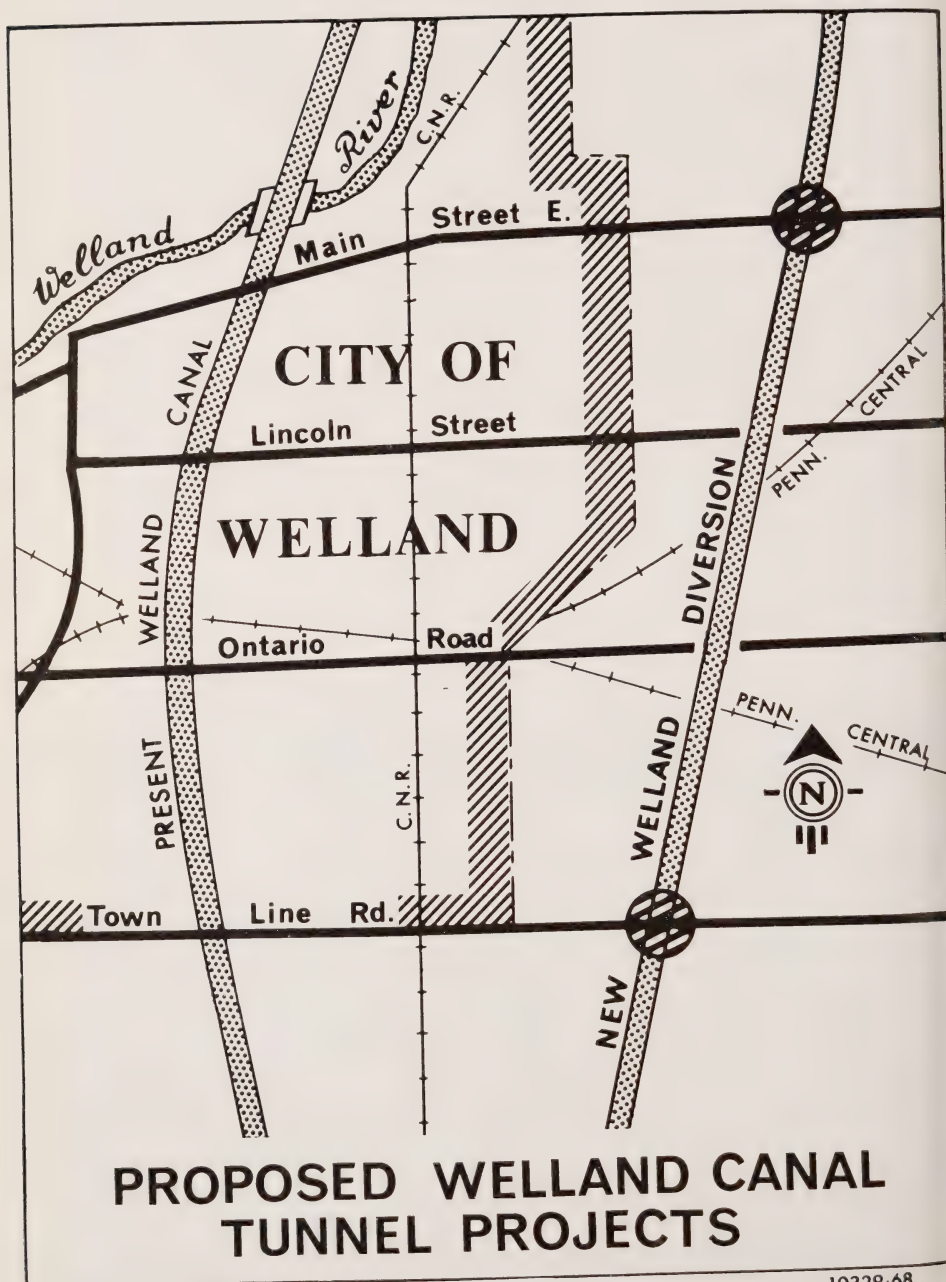
District forces applied 24,500 tons of crushed stone on 585 miles of highway shoulder.

The District Forestry crew seeded 96 acres of highway right-of-way and planted 2,303 trees and shrubs. Our weed spraying program was expanded and carried out on 368 miles of highway. A soil sterilant treatment was applied along 64 miles of



guide rails using 627 gallons of simazine this year and excellent results with very little leaching were obtained. A total of 1,653 dead or dying trees were removed by the Forestry crew with an additional 508 trees removed by two contracts.

The District Sign Shop erected or replaced 7,525 signs which in number is close to the number erected last year.



The District erected 387 rods of farm fence to complete property options. Repairs to 69 rods of security fence were carried out as well as the erection of 100 rods of new security fence in the vicinity of Burlington Street in the median of the Q.E.W., anti-glare panels were installed on the median steel beam guide rail from Highway No. 2 to Burlington Street at the Burlington Bay Skyway. A special bracket, designed by the District and fabricated by the Steel Company, was required for this installation.

Two bus-stop areas were constructed along the Q.E.W., at Highway No. 25 and at Trafalgar Road Interchanges.

During the year, a total of 3 frame buildings for salt storage were constructed at the new Canfield Patrol Yard, the Winona Patrol Yard and Winona District Stores. 1 frame office building was constructed at the Palermo Patrol Yard. A new 4-bay metal clad Patrol Garage and office was erected at the Elfrida Patrol Yard. Construction began on a 5-bay metal clad, Patrol Garage at Duff's Corners.

Liquid calcium chloride was again spread by contract for dust control on various sections of highway shoulders throughout the District and good results were obtained.

In the summer months, a total of 3 off-road parks were maintained and picnic tables were set up at 51 various locations throughout the District.

During the winter season, 66,463 tons of treated sand and 11,482 tons of raw salt were spread on the highways for ice control. This represents a decrease from the previous year and is justified due to fewer winter storms during the past year.

#### Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
20	C.N.R.	11.87 Fonthill — Subdivision — Lots No. 162-163 — Township of Thorold .....	4 flashing lights, 1 bell
58	C.N.R.	16.52 Fonthill — Subdivision — Lincoln Street — Welland .....	Pre-emptor Unit added to existing Traffic Signal

<sup>1</sup>See B.O. 120051-123855 and R.298

<sup>2</sup>See B.O. 123375-124297

#### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
3	Fort Erie West Limits south to Goderich Street .....	0.64	1966	0.64	—	1,399
6	Aberfoyle southerly to County Road 18 .....	3.58	1967	Nil	3.58	11,034
8	C.N.R. Bridge Approach south of St. Davids .....	0.63	1967	Nil	0.63	3,615
8	Stoney Creek to Winona Side Road ....	4.23	1967	Nil	4.23	32,297
8	Homer Bridge, St. Catharines .....	—	1967	Nil	—	250
20	Niagara Falls West Limit to Allanburg	2.00	1967	Nil	2.00	11,050
24	Highway 53 southerly 8.66 miles .....	8.66	1966	1.47	7.19	5,043

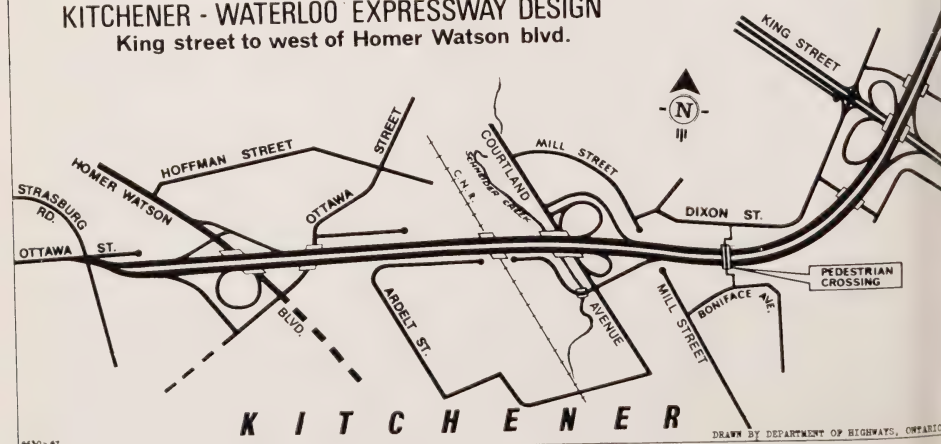
24A	Paris northerly to Galt West Limit .....	6.16	1967	Nil	6.16	12,819
25	Highway 401 northerly to Acton .....	9.60	1967	Nil	9.60	19,513
58	Highway 20 north to Thorold Stone Road .....	0.24	1967	Nil	0.24	188
85	Doon Road to Block Line Road Kitchener .....	2.00	1965	Nil	2.00	23,186
403	Mohawk Road Interchange westerly .....	0.81	1967	Nil	0.81	2,156
2 & 403	0.5 miles west of Hamilton Drive to Highway 2 and Duff's Corner's .....	0.19	1967	Nil	0.19	1,635
K-WE	King Street to Frederick Street, Kitchener .....	0.25	1967	Nil	0.25	2,608
K-WE	Homer Watson Boulevard to King Street, Kitchener .....	0.23	1967	Nil	0.23	707
QEW	Ontario Street Interchange St. Catharines .....	1.37	1966	0.27	1.10	12,772
QEW	Rainbow Bridge Traffic Circle and Interconnecting Roads .....	0.16	1967	Nil	0.16	3,519
QEW	QEW Extension at Stanley Avenue .....	0.32	1967	Nil	0.32	1,710
QEW	Vineland to Garden City Skyway .....	4.77	1967	Nil	4.77	16,245
QEW	Parking Lot Rainbow Bridge Plaza .....	—	1967	Nil	—	1,484
QEW	Toll Plaza Burlington Bay Skyway .....	—	1967	Nil	—	1,169
TOTAL .....		45.84		2.38	43.46	164,399

<sup>1</sup>Intersections only

### Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
24	Brantford South Limits to Norfolk County Line being reverted to County .....	7.00	5,793
24A	Paris North Limits to Galt West Limits .....	10.27	12,819
25	Highway 401 Interchange to Acton .....	9.60	19,514
QEW	Vineland Interchange to Garden City Skyway .....	3.91	16,245
QEW	Burlington Bay Skyway Bridge .....	2.54	5,563
TOTALS .....		33.32	59,934

### KITCHENER - WATERLOO EXPRESSWAY DESIGN King street to west of Homer Watson blvd.



## Bituminous Surface Treatment

Hwy. No.	LOCATION	MILES COMPL.	GALLONS BITUMULS USED	TONS CHIPS USED
3A	From junction of Highway 57 to Welland (old limits) ....	7	21,130	1,106.40
54	From Cayuga to Caledonia .....	9	28,960	1,355.29
TOTALS .....			50,090	2,461.69

## Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
2	Grand River, Paris .....	1967			Steel Girder
6	C.P.R. Overpass, Puslinch .....	1967	1967	1967	Pre-stressed Concrete
8	C.N.R. Subway, St. Davids .....	1967	1967	1967	Steel Girder <sup>1</sup>
58	Thorold Tunnel under Welland Canal .....	1966			Tunnel
58	Collier Road Overpass, Thorold .....	1967	1967	1967	Pre-stressed Concrete
58	C.N.R. Subway near Queen Street, Thorold	1967	1967	1967	Plate Girder
403	Fiddlers Green Road, Ancaster .....	1967	1967	1967	Pre-stressed Concrete
403	Golf Club Road Underpass, Ancaster .....	1967	1967	1967	Pre-stressed Concrete
403	South Cote Road Underpass, Ancaster .....	1967	1967	1967	Pre-stressed Concrete
403	T. H. & B. Subway, Hamilton .....	1967			Box Girder
403	Mohawk Road Underpass, Ancaster .....	1967			Pre-stressed Concrete
403	Highway 2 Underpass, Duff's Corners .....	1967			Pre-stressed Concrete
403	Highway 2 Over West to South Bound Ramp, Duff's Corners .....	1967			Pre-stressed Concrete

### DESIGN OF KITCHENER-WATERLOO EXPRESSWAY KING STREET TO FREDERICK STREET





403	Hamilton Drive Under pass, Duff's Corners	1967					Pre-stressed Concrete
K-WE	Krug Street Overpass, Kitchener .....	1967	1967				Pre-stressed Concrete
K-WE	Ottawa Street Overpass, Kitchener .....	1967	1967	1967			Pre-stressed Concrete
K-WE	Schneider Creek Bridge, South Service Road, Kitchener .....	1967	1967				Concrete Rigid Frame
K-WE	Courtland Avenue Overpass, Kitchener ....	1967					Pre-stressed Concrete
K-WE	C.N.R. Overhead, Kitchener .....	1967					Concrete Rigid Frame
K-WE	Homer Watson Boulevard Overpass, Kitchener .....	1967					Pre-stressed Concrete
K-WE	Guelph Street Underpass, Kitchener .....	1967					Concrete Rigid Frame
QEW	N.Y.C. and C.N.R. Overpass, Bertie Township .....	1967	1967	1967			Continuous <sup>2</sup> Steel Girder
QEW	Ontario Street Underpass, St. Catharines ..	1967	1967	1967			Pre-stressed Concrete Girder

<sup>1</sup>Built by C.N.R.<sup>2</sup>Deck Replacement only of East Bound Lane

### Concrete Base Pavement, Asphalt Top

HWY. No.	LOCATION	MILES	YEAR BEGUN	MILES	THIS FISCAL YEAR		
		IN JOB		COMPL. PREVIOUS YEARS	MILES COMPL.	TONS PLACED	PAVEMENT WIDTH
QEW	Ontario Street Interchange St. Catharines .....	1.37	1966	0.27	1.10	9,717	48 feet

### Concrete Pavement

Hwy. No.	LOCATION	MILES	YEAR BEGUN	MILES	THIS FISCAL YEAR		
		IN JOB		COMPL. PREVIOUS YEARS	MILES COMPL.	SQ. YDS. PLACED	PAVEMENT WIDTH
24	Highway 53 southerly to Norfolk County Line ..	8.60	1966	Nil	8.60	117,870	24 feet
58	0.5 miles west of Collier Road to Thorold Tunnel .....	1.30	1966	Nil	1.30	61,336	48 feet
QEW	Q.E.W. Extension at Stan- ley Street Niagara Falls .....	0.32	1967	Nil	0.32	2,097	Varies
TOTALS ..		10.22			10.22	181,303	

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
3	Fort Erie westerly to County Road 28 .....	6.70	27,007
3	Fort Erie West Limit to Goderich Street .....	0.64	504
3 & 6	Village of Jarvis .....	1.81	2,996
6	Aberfoyle south to County Road 18 .....	5.50	258,752
8	Doon Road to Block Line Road .....	1.70	31,586
8	Approaches C.N.R. Subway south of St. David's .....	0.63	23,058
8	Stoney Creek to Winona Side Road .....	5.94	317,364
8	Homer Bridge St. Catharines .....		1,187
20	Niagara Falls West Limit to Allanburg .....	2.00	90,340
24	Brantford South Limit to Norfolk County Line .....	9.00	20,077
24A	Highway 53 south 8.4 miles (now Highway 24) .....	8.40	51,334
24A	Paris north to Galt West Limit .....	10.27	15,445
25	Highway 401 northerly to Acton .....	9.60	29,270
58	Thorold Tunnel Approaches .....	0.65	3,389
58	West of Collier Road to Thorold Tunnel .....	1.30	146,398
58	Highway 20 to Thorold Stone Road .....	4.87	56,967
403	T.H. & B. Railway west to Mohawk Rd. Interchange .....	1.81	333,875
403	Mohawk Road Interchange westerly .....	3.43	16,991
403	T.H. & B. Railway Subway Approaches Hamilton .....	0.51	140
403 & 2	0.5 miles east of Hamilton Drive to Highway 2 and Duff's Corners .....	0.76	15,876
K-WE	King St. to Frederick St. ....	1.40	46,616
K-WE	Homer-Watson Blvd. to King St. ....	1.78	13,403
QEW	Ontario Street Interchange St. Catharines .....	1.37	173,920
QEW	Rainbow Bridge Traffic Circle .....		1,700
QEW	QEW Extension at Stanley Avenue .....		4,304
QEW	Vineland to Garden City Skyway .....	8.68	21,283
QEW	Parking Lot Rainbow Bridge Plaza .....		5,018
QEW	Toll Plaza Burlington Bay Skyway .....		5,126
TOTALS .....		88.75	1,713,926

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	Halton-Peel County Line to Eastwood .....	53.00	2,388
3	Fort Erie to Jarvis .....	72.78	4,080
3A	Chamber's Corners to Welland .....	9.38	280
3C	Ridgeway to Fort Erie .....	6.79	387
5	Halton-Peel County Line to Paris .....	31.23	2,899
6	Jarvis to junction Highways 6 and 401 .....	38.96	578
7	Halton-Peel County Line to 2.82 miles west of Acton .....	11.26	322
8	Galt to Niagara Falls .....	57.80	1,487
20	Niagara Falls West Limits to junction Highway 8 .....	2.70	274
	Hamilton .....	40.34	1,987
24	Norfolk-Brant County Line to Galt .....	20.86	209
25	Junction Q.E.W. to Acton .....	24.00	300
53	Junction Highway 56 to Eastwood .....	27.30	3,938
54	Junction Highway 3 to junction Highway 2 Cainsville .....	26.90	364
56	Elfrida to junction Highway 5 .....	14.74	212
58	Junction Highway 3 to Thorold .....	14.91	527
99	Dundas to junction Highway 24 .....	15.80	579
122	Halton-Peel County Line to junction Q.E.W. ....	2.60	20
401	Junction Highway 25 to junction Highway 8 .....	28.49	491
405	Junction Q.E.W. to Queenston .....	5.53	10
QEW	From 5th Line, Toronto Township to Fort Erie .....	79.70	3,164
TOTALS .....		585.07	24,496

## Grading and Culverts

Grading and Curves				MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN		
2	Approaches Grand River Bridge, Paris .....	0.29	1967	Nil	0.24
3	Fort Erie westerly to County Road 28, Gorham Road .....	6.70	1964	6.35	0.35
3 & 6	Village of Jarvis .....	1.81	1967	Nil	0.20
6	From Aberfoyle southerly to County Road 18 ..	5.50	1966	0.33	5.09
8	Approaches to C.N.R. Subway south of St. Davids .....	0.63	1966	0.51	0.12
8	Winona Road westerly to Hamilton Limits .....	5.94	1966	Nil	5.80
58	Thorold Tunnel Approaches .....	0.65	1965	0.56	0.09
58	0.5 miles west of Collier Road Thorold easterly 1.3 miles .....	1.30	1966	0.65	0.65
58	Highway 20 northerly to Thorold Stone Road ..	4.87	1967	Nil	3.65
403	T.H. & B. Railway, Hamilton, westerly .....	1.81	1965	1.08	0.73
403	Mohawk Road westerly to 0.5 miles east of Hamilton Drive .....	3.43	1966	Nil	3.09
403	T.H. & B. Subway Approaches .....	0.51	1967	Nil	0.20
403	0.5 miles east of Hamilton Drive to Highway 2 and Duff's Corner .....	2.46	1967	Nil	1.38
K-WE	King Street to Frederick Street, Kitchener .....	2.55	1967	Nil	2.00
K-WE	Guelph Street, Kitchener .....	0.42	1967	Nil	0.14
K-WE	Homer Watson Blvd. to west of King Street, Kitchener .....	1.78	1967	Nil	0.35
QEW	Rainbow Bridge Traffic Circle Interconnecting Road .....	0.16	1966	Nil	0.16
QEW	Intersection Improvements, Stanley Avenue, Q.E.W. Extension .....	0.32	1967	Nil	0.32
TOTALS .....		41.13		9.48	24.56

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES	YEAR BEGUN	MILES	THIS FISCAL YEAR	TONS PLACED
		IN JOB		COMPL. PREVIOUS YEARS	MILES COMPL.	
6	Aberfoyle southerly to County Road 18 .....	5.50	1966	0.39	5.11	256,308
8	Approaches to C.N.R. Subway south of St. Davids .....	0.63	1966	Nil	0.63	23,058
8	Stoney Creek to Winona Side Road .....	5.94	1966	Nil	5.85	301,170
20	Niagara Falls West Limit to Allanburg (Allanburg Diversion) . ....	2.00	1966	Nil	2.00	87,877
24	Highway 53 south to Norfolk County Line .....	8.66	1966	4.58	4.08	92,228
58	0.5 miles west of Collier Road to Thorold Tunnel .....	1.30	1966	Nil	1.30	147,195
58	Thorold Tunnel Approaches .....	0.65	1966	Nil	0.65	2,239
58	Highway No. 20 to Thorold Stone Road .....	4.13	1967	Nil	1.03	53,293
85	Doon Road to Block Line Road, Kitchener .....	1.70	1966	1.22	0.48	75,566
403	T. H. & B. Railway Hamilton to Mohawk Interchange .....	1.81	1965	1.08	0.73	145,335
403	Mohawk Interchange westerly .....	3.43	1966	Nil	1.06	16,481
K-WE	King Street to Frederick Street, Kitchener .....	1.40	1967	Nil	0.71	45,616

K-WE	Homer Watson Boulevard to King Street, Kitchener .....	1.78	1967	Nil	0.09	13,403
QEW	Ontario Street Interchange, St. Catharines .....	1.03	1966	0.55	0.48	120,166
TOTALS .....		39.96		7.82	24.20	1,380,935

## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
QEW	Lot No. 6, Concession No. 1, Saltfleet Township, County of Wentworth ..	Frame	Calcium Storage	1967	1967
QEW	Lot No. 6, Concession No. 1, Saltfleet Township, County of Wentworth ..	Frame	Salt Storage	1967	1967
56	Lot No. 13, Concession No. 1, north of Talbot Road, Seneca Township, County of Haldimand .....	Frame	Salt Storage	1967	1967
20	Lot No. 2, Concession Block, Binbrook Township, County of Wentworth .....	Metal	Garage		
8	Lot No. 13, Concession No. 3, Clinton Township, County of Lincoln	Frame	Patrol Office	1967	1967

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	2	—	—
Calcium dust layer on gravel roads .....	—	—	—
Calcium for de-icing roads .....	—	—	—
Development roads built .....	—	—	—
Off-road parks maintained .....	3	—	—
Roads snowploughed and kept open, King's highways .....	—	—	885
Roads snowploughed and kept open, secondary highways .....	—	—	—
Roadside picnic places maintained .....	51	—	—
Routine maintenance, King's highways .....	—	—	885
Routine maintenance, secondary highways .....	—	—	—
Salt for de-icing roads (raw) .....	—	11,482	—
Salt in sand, stockpiled .....	—	7,762	—
Sand for winter maintenance .....	—	66,463	—
Scale houses maintained .....	4	—	—
Seeding by department's forces .....	96	—	—
Shrubs received and planted this year .....	2,303	—	—
Signs erected or replaced .....	7,525	—	—
Snow fence erected, dismantled, stored .....	—	—	56
Snow hedges planted this year .....	Nil	—	—
Traffic lights installed this year .....	12	—	—
Weed control .....	—	—	368
Zone painting on King's highways .....	15,254	—	—
Zone painting on secondary highways .....	Nil	—	—



**DISTRICT No. 5 — OWEN SOUND****H. F. Gilbert, P.Eng., District Engineer****CONSTRUCTION**

Several of our carryover contracts were completed during the 1967-68 Construction Season. These included two structure contracts: (1) Carrying St. Vincent Street traffic over Highway 400 at Barrie and (2) The Beaver River Structure in Thornbury.

The Grading, Drainage, Granular Base and Paving Contract, which was begun late in 1966, covering from Highway 6 in Durham easterly along Highway 4 for two and one-half miles, eased a curve under the C.P.R. railway, assisting traffic flow.

Work is well advanced on a Grading, Drainage, Granular Base, Paving and structure contract on Highways 26 and 27 from Barrie to Midhurst. This contract includes a deep-strength asphalt pavement. Four lanes are being constructed, separated by a singing median. The new structure is in the process of being built over the Willow Creek north of the intersection of Highways 26 and 27.

A large, double concrete box culvert is under construction on Highway 10 approximately one mile north of Markdale where an old concrete structure carried traffic over the Saugeen River. The fill, coming from adjacent cuts on this contract, will be approximately 60 ft. over original ground.

Another resurfacing contract was completed on Highway 400 from the junction of Highway 93 to the intersection with Highway 12, near Coldwater. Several isolated frost-heave treatments, involving French drains, were constructed, under supervision of our Maintenance Forces, prior to the award of the contract.

Speed Zone Signing was used on the foregoing three contracts this year. Very effective results in controlling traffic were obtained.

Work is well advanced at the intersection of Highways 9 and 27 north of Schomberg. A new diversion is incorporated under this construction, linking this intersection with Highway 27, approximately one-half mile north of Highway 9. A new structure is being built over a branch of the Schomberg River which is susceptible to flooding during the spring of the year.

In order to eliminate ice jams and flooding conditions which have occurred regularly in the spring of the year between Stayner and Collingwood, a large concrete box culvert and highway diversion was completed at Brock's Beach.

Work completed was on the stripping, water-proofing and repairs on several bridge decks on Highway 400 in conjunction with the 16.5 mile resurfacing contract, primarily on the northbound lanes. Traffic control was a major problem on this contract and was effectively handled. Adequate traffic cones, barricades, flashing lights and Flagmen gave excellent traffic control on these contracts.

Two clearing, grubbing and fencing contracts were awarded on Highway 4, between Hanover and Walkerton, and on Highway 6, from six miles north of Wiarton to approximately twelve miles north of Wiarton. These contracts were awarded and the work carried out in order to facilitate utility relocation prior to full-scale reconstruction.

Work is well under way on a rock excavation and grading contract from Wiarton northerly for approximately 6 miles. The contract was awarded late in



**Hwy. 26 — Sandblasting and repainting Nottawasaga River Bridge east of Stayner.  
Photo 10221—(Owen Sound)**

1967 and involved a large quantity of rock excavation. The Contractor is, at present, using a large 12 C.Y. loader in removing shot rock.

#### MAINTENANCE

In the 1967-68 season, a building addition was added to the District Stockroom for material stores. A five bay steel, heated patrol building was erected at Cookstown on Highway 27. To combat contamination, a new dome type salt storage building was erected on Highway 10 south of Chatsworth. Paving of sand pile areas was performed at Coldwater, Woodford and Kincardine.

Land has been purchased for the establishment of a new patrol yard site at Clavering on Highway 6, south of Wiarton. Land was also purchased to establish five new radio tower sites and developed for a changeover to Department-owned two-way radio system.

Two major pieces of equipment were supplied to the district in the form of a new one painting machine which permitted left and right hand application and a three on truck equipped with a 30 feet telescoping boom and twin buckets for the electrical crew.

On June 1, 1967, District 5 received from District 6, Toronto, that portion of Highway 400 from the North Canal Bridge at the Simcoe-York Boundary northerly to the Cookstown Cloverleaf. In doing so, a patrol based at Law's Pit was added to District 5, Owen Sound. A centennial project was the construction of a new entrance,

landscaping and new fencing at the District Headquarters Yard. Day labour forces were kept busy cleaning and painting structures, trimming of slopes to reduce snow problems and placing gabion type retaining walls to reduce river bank erosion.

Winter maintenance operations saw all spreaders modified with a trunk type applicator for salt. Calibration for uniform applications of salt and sand was also carried out on all spreader units. Three automatic sanders were used and these allowed controlled rate of applications at varying speeds. Twin flush type blue flashing lights were installed on the rear sign board of plows with excellent results.

Several sand piles were covered with 6 mil. thickness, black polyethylene in 40 ft. wide strips and 10 oz. jute overlay. In view of the District's concern for need to combat salt contamination, it is considered that the use of polyethylene provided a rapid preventive measure against water contamination.

Maintenance Quality Standards and Cost Reporting Program is in operation.

Routine summer and winter maintenance was continued on as usual.

### Bituminous Hot Mix Pavement

Hwy. No.		MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
4	Durham easterly .....	2.25	1966	n/a	2.25	7,209.46 <sup>1</sup>
4	Flesherton westerly 4.2 miles .....	n/a	1967	n/a	n/a	200.00 <sup>2</sup>
6 & 10	Intersection Improvement at Rockford .....	0.36	1967	n/a	0.36	2,233.16
9 & 27	Intersection Improvement at Schomberg .....	1.20	1967	n/a	1.20	3,349.00 <sup>3</sup>
10	Dundalk to Chatsworth .....	n/a	1967	n/a	n/a	1,289.12
12T.C.	Coldwater By-Pass .....	n/a	1967	n/a	n/a	445.30
26	Meaford westerly .....	n/a	1967	n/a	n/a	130.00
26	Beaver River Bridge in Thornbury .....	0.10	1967	n/a	0.10	347.05 <sup>4</sup>
26	Intersection Improvements at Brock's Beach .....	0.53	1967	n/a	0.53	3,898.70
26	Edenvale Bridge Approaches .....	n/a	1967	n/a	n/a	20.00
26 & 27	Barrie to Midhurst Corners including Willow Creek Structure .....	3.60	1967	n/a	3.60	21,478.00
27	Immediately south of the Wye River Bridge .....	n/a	1967	n/a	n/a	480.00
89	Cookstown westerly 0.5 mile .....	0.36	1967	n/a	0.36	1,045.05
91	Stayner to Duntroon .....	5.12	1966	n/a	5.12	11,250.50 <sup>5</sup>
400	From junction Highway 89 northerly to Highway 11 (north bound lane) .....	16.46	1967	n/a	16.46	28,654.00
400	St. Vincent Street Underpass at Barrie ..	0.40	1967	n/a	0.40	842.71
400	From Highway 93 to Highway 12 .....	11.50	1967	n/a	11.50	20,067.99
501	Curve revision 1 mile north of junction Highway 103 .....	0.36	1967	n/a	0.36	488.15 <sup>6</sup>
TOTALS .....		42.24			42.24	103,428.19

<sup>1</sup>Includes 1,216.51 tons Sand Asphalt Course

<sup>2</sup>Patching

<sup>3</sup>Base Course only, including 324 tons Sand Asphalt Course

<sup>4</sup>Includes 560.90 tons Sand Asphalt Course

<sup>5</sup>Base Course only including 3,654 tons Sand Asphalt Course

<sup>6</sup>Includes 13,178.76 tons Sand Asphalt Course

<sup>7</sup>Includes 7,060.70 tons Sand Asphalt Course



**Bituminous Prime on Gravel Roads**

HWY. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
6	1 mile north of Wiarton to 14 miles north .....	13	40,626	747.6
	TOTAL .....	13	40,626	747.6

**Bridges Built**

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
10	Rocky Saugeen River Bridge, 0.7 miles north of Markdale .....	1967	1967	1967	Reinforced Concrete
26	Beaver River Bridge, Thornbury .....	1966	1967	1967	Reinforced Concrete Structural Steel
27	Schomberg River Bridge, 0.2 miles north of junction Highway 9 .....	1967	—	—	Reinforced Concrete Pre- stressed Beams
27	Willow Creek Bridge, 0.3 miles north of junction Highway 26 .....	1967	—	—	Reinforced Concrete Structural Steel
400	St. Vincent Street Overpass, Barrie .....	1966	1967	1967	Reinforced Concrete with Post Stressed Deck

**Crushed Gravel and Stone on Roads by Contract**

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
4	Durham easterly .....	2.29	28,603.58
5 & 10	Rockford Intersection .....	0.36	5,031.08
9 & 27	Schomberg Intersection Improvement .....	—	49,400.00
10	Rocky Saugeen Structure, 0.5 miles north of Markdale .....	0.90	7,360.00
10	D.H.O. Yard, Flesherton .....	—	3,000.00 <sup>1</sup>
21	D.H.O. Yard, Tiverton .....	—	4,000.00 <sup>1</sup>
26	Beaver River Bridge, Thornbury .....	0.10	525.40
26	D.H.O. Yard, Meaford .....	—	3,000.00 <sup>1</sup>
26	Intersection Highway 26 and County Road 27 at Brock's Beach .....	0.53	6,102.09
16 & 27	Barrie to Midhurst Corners including Willow Creek Structure .....	2.00	84,455.00
89	Culvert Replacement and Stream Diversion 0.5 miles west of Highway 27 .....	0.36	2,666.76
91	Stayner to Duntroon .....	4.81	12,484.39
00	St. Vincent Street Underpass, Barrie .....	0.40	5,789.46
00	Junction Highway 89 northerly to Highway 11 (north bound lane) .....	16.46	41,686.97
00	From Highway 93 to Highway 12 .....	11.50	29,750.77
01	D.H.O. Stockpile, 6.5 miles north of junction Highway 103 .....	—	2,993.29
01	Curve Revision, 1 mile north of junction Highway 103 .....	0.36	2,300.00
	TOTALS .....	40.07	289,148.79

Stockpiled



## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
4	Huron Bruce County Line to Highway 10 at Flesherton .....	56.20	2,169.00 <sup>1</sup>
6	Mount Forest to Tobermory .....	115.40	755.25 <sup>1</sup>
9	Clifford West Limits to east junction Highway 4, west junction Highway 4 to Highway 21 at Kincardine .....	31.00	528.00 <sup>1</sup>
10	Dundalk to Highway 6 at Chatsworth .....	32.80	730.50 <sup>1</sup>
11	Bradford East Limits to Severn River Bridge .....	88.80	2,724.00 <sup>1</sup>
11B	Junction Highway 11 (south) to junction Highway 11 (north) .....	6.00	1,644.00 <sup>1</sup>
12	Orillia to Coldwater, Waubesaushene to Midland .....	35.70	1,555.50 <sup>1</sup>
21	Junction Highway 86, Kincardine to junction Highway 6 at Alvanley .....	54.50	3,259.50 <sup>1</sup>
24	Maple Valley to junction Highway 26, Collingwood .....	18.40	1,881.00 <sup>1</sup>
26	Junction Highway 11, Barrie, to junction Highway 6, Owen Sound .....	76.50	4,816.50 <sup>1</sup>
27	Junction Highway 9 to Penetanguishene .....	56.10	3,469.50 <sup>1</sup>
69	Washago to Highway 11, Severn River Bridge .....	0.50	30.00 <sup>1</sup>
70	Junction Highway 6, Springmount, to junction Highway 6 at Hepworth .....	9.20	53.25 <sup>1</sup>
89	Junction Highway 400 to Simcoe/Dufferin County Line .....	18.30	270.00 <sup>1</sup>
92	Junction Highway 27 to Wasaga Beach .....	8.90	16.50 <sup>1</sup>
93	Junction Highway 11 to junction Highway 27 .....	17.50	706.50 <sup>1</sup>
103	Junction Highway 400 to junction Highway 501 .....	5.40	150.00 <sup>1</sup>
400	York/Simcoe County Line to junction Highway 12 (Coldwater) ..	78.10	1,876.50 <sup>1</sup>
501	Highway 103 to Honey Harbour .....	9.20	226.50 <sup>1</sup>
TOTALS .....		718.50	26,862.00

<sup>1</sup>Shoulders and Surface<sup>2</sup>Shoulders<sup>3</sup>Surface

## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES	
				COMPL. PREVIOUS YEARS	COMPL. THIS YEAR
6	From Divison Street in Wiarton northerly, 6.65 miles .....	6.65	1967	—	—
9 & 27	Schomberg Intersection Improvement .....	3.34	1967	—	3.00
10	Rocky Saugeen Structure, 0.5 mile north of Markdale .....	0.90	1967	—	—
26	Beaver River Bridge, Thornbury .....	0.10	1966	—	0.10
26	Intersection of Highway 26 and Simcoe County Road 27 at Brock's Beach .....	0.53	1966	—	0.53
26 & 27	Barrie to Midhurst Corners including Willow Creek Structure .....	4.40	1967	—	3.70
400	St. Vincent Street Underpass, Barrie .....	0.40	1966	—	0.40
501	Curve Revision, 1 mile north of junction High- way 103 .....	0.36	1967	—	0.36
TOTALS .....		16.68			8.09

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR	
					MILES COMPL.	TONS PLACED
4	Durham easterly .....	2.29	1966	1.00	1.29	28,471.8
6 & 10	Rockford Intersection .....	0.36	1966	0.30	0.06	6,570.3
9 & 27	Schomberg Intersection Improve- ment .....	3.34	1967	—	3.00	175,148.0

10	Rocky Saugeen Structure, 0.5 miles north of Markdale .....	0.90	1967	—	—	31,793.00
26	Beaver River Bridge, Thornbury .....	0.10	1966	—	0.10	2,477.71
26	Intersection of Highway 26 and Simcoe County Road No. 27 at Brock's Beach .....	0.53	1966	—	0.53	30,044.49
26 & 27	Barrie to Midhurst Corners including Willow Creek Structure .....	4.40	1967	—	3.70	85,009.00
89	Culvert Replacement and Stream Diversion, 0.5 miles west of Highway 27 .....	0.36	1966	0.29	0.07	3,266.97
400	St. Vincent Street Underpass, Barrie .....	0.40	1966	—	0.40	10,686.69
501	Curve Revision 1 mile north of junction Highway 103 .....	0.36	1967	—	0.36	9,720.00
TOTALS .....		13.04	1.59	9.51		383,188.05

## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
	Owen Sound Headquarters — 40 ft. by 72½ ft., one floor .....	Concrete block	Material Stock Storage, Wash-room and Locker Areas	1967	1967
	Cookstown Patrol Yard — 104 ft. by 40 ft. ....	Metal Prefabricated 5 bay Patrol Garage	Patrol Vehicle Storage and Office	1967	1967
10	Chatsworth Sand Yard — 50 ft. diameter .....	Sand Dome	Salted Sand Storage	1967	1967

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	(gallons) 7	200	—
Calcium dust layer on gravel roads .....	—	40	18
Calcium for de-icing roads .....	—	—	—
Development roads built .....	—	—	—
Off-road parks maintained .....	17	—	—
Roads snowploughed and kept open, King's highways .....	—	—	730
Roads snowploughed and kept open, secondary highways .....	—	—	9
Roadside picnic places maintained .....	51	—	—
Routine maintenance, King's highways .....	—	—	730
Routine maintenance, secondary highways .....	—	—	9
Salt for de-icing roads (raw) .....	—	20,052	—
Salt in sand, stockpiled .....	—	4,373	—
Sand for winter maintenance .....	—	116,620	—
Scale houses maintained .....	—	—	—
Seeding by department's forces .....	(acres) 55	—	—
Shrubs received and planted this year .....	1,334	—	—
Signs erected or replaced .....	8,532	—	—
Snow fence erected, dismantled, stored .....	—	—	115
Snow hedges planted this year .....	—	—	.27
Traffic lights installed this year .....	—	—	—
Feed control .....	—	—	798
Line painting on King's highways .....	(gals.) 11,890	—	970
Line painting on secondary highways .....	(gals.) 190	—	9

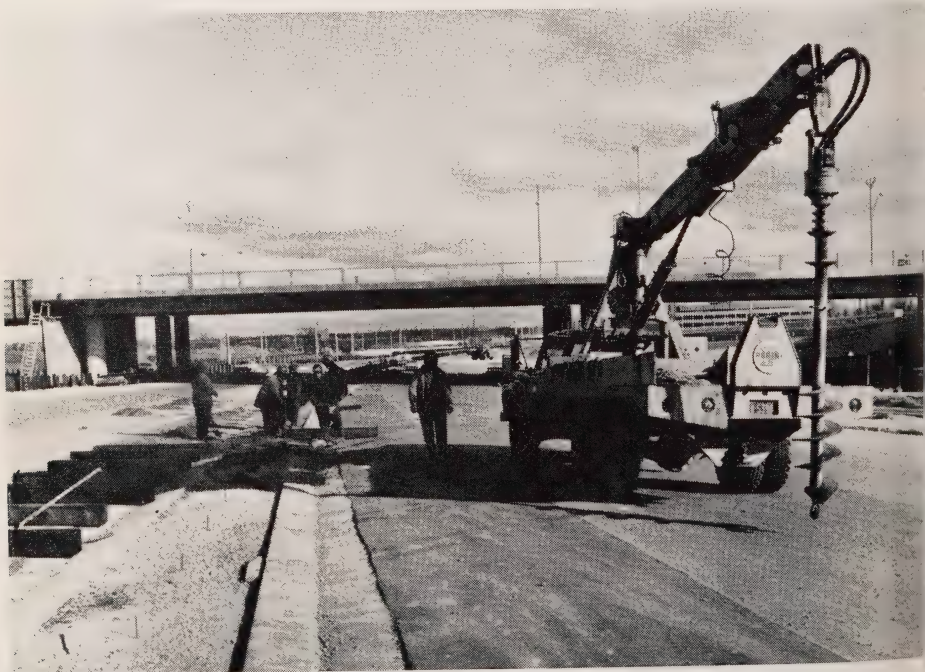
**DISTRICT No. 6 — TORONTO****F. G. Allen, P.Eng., District Engineer****CONSTRUCTION**

In May of 1967, the Toronto District experienced for the first time a general construction strike and lockout that paralyzed all road construction within Metro Toronto. The labour dispute resulted in a complete shutdown of construction operations from the middle of May to the middle of August and a slowdown of construction from mid-August to mid-October as the steel setters local remained on strike after the other trades were settled.

It is interesting to note that despite the stoppage of construction for this period of time that the majority of the contractors regained the lost time by rescheduling their operations to meet a more demanding schedule.

Another 2.9 mile section of the Toronto By-Pass portion of the Macdonald-Cartier Freeway was completed to its full width and opened to traffic, between Wendell Avenue and Kipling Avenue, and another section between the Don River and Warden Avenue was virtually completed and will be open to traffic in the summer of 1968 when the section of the Freeway reconstruction between the Don River and Yonge Street is completed.

The contract for the reconstruction of the By-Pass between Kipling Avenue and Martin Grove Road is progressing rapidly with completion expected in the Spring of 1969.



Hwy. 401 — Erecting median barrier west of Islington Avenue. Photo 10309A—(Toronto)



The fiscal year 1967-1968 saw the awarding of the first two major contracts on the Highway 27 and Queen Elizabeth Way complex. These contracts are for the reconstruction of the Queen Elizabeth Way from Royal York Road to west of Wickman Road and from west of Highway 27 to west of Etobicoke Creek.

The contracts for the widening of Highway 10, from Burnhamthorpe Road to Highway 122, from Highway 2 to the Queen Elizabeth Way, were completed and the contract for widening Highway 2, from Metropolitan Toronto east limits to Dunbarton was completed with the exception of the top course of asphalt which will be placed in the spring of 1968.

Three contracts were awarded for the replacing of existing structures over the Little Rouge River, the west branch of Duffin's Creek and over the Pefferlaw Brook River. These contracts were awarded for winter structure construction and are on schedule for completion in the summer of 1968.

Because of the success of the new GO (Government of Ontario) transit system it became necessary to enlarge many of the parking lots. District 6 supervised the construction of a new parking lot at the Eglinton Station as well as the enlarging of the existing parking lots at Pickering, Guildwood North, Guildwood South, Port Credit and Oakville. In addition to the enlarging of the parking facilities a contract was awarded and completed for the paving of all the parking lots along the GO transit system.



Q.E.W. and Hwy. 27—Artist conception of proposed new interchange. Photo 10419—(Toronto)



The fiscal year 1967-1968 was a very successful and busy year for Toronto District as can be readily envisioned with a total construction expenditure of approximately \$36,000,000.

## MAINTENANCE

854 equivalent 2 lane miles of highway were maintained during the year.

Pavement patching by contract continued with 14,785 tons of hot mix asphalt being used on 284 miles of highway.

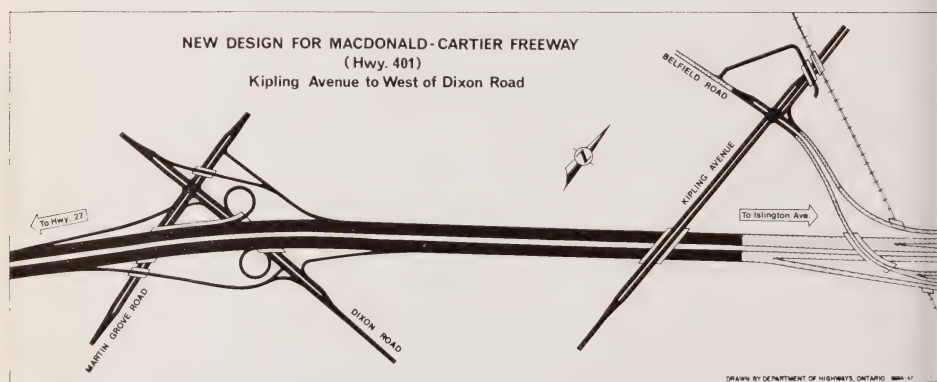
2,199 gallons of weed spray was applied to 1,466 miles of right-of-way, this includes a second application to shoulder areas in the latter part of the summer for the control of rag-weed.

The Department called a total of 6 grass mowing contracts to cut a major portion of the right-of-ways. The remaining mowing was carried out on a day labour basis, using Department forces and some rented equipment.

The Sign Shop and Sign Erecting Crews, again had a busy year manufacturing and erecting some 18,362 ground signs and 88 overhead signs.

The highway winter maintenance program required 83,077 tons of sand and 44,962 tons of salt to be spread on 854 equivalent 2 lane miles of highway.

The Emergency Traffic Patrol staff was increased considerably in order to maintain the quality of the service in keeping the ever increasing volume of traffic moving on the freeways.



## Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES	THIS FISCAL YEAR	TONS PLACED
				COMPL. PREV. YRS.	MILES COMPL.	
401	Macdonald-Cartier Freeway and Weston Road Interchange — From Wendell Avenue to 0.3 miles west of Humber River—(Macdonald-Cartier Freeway) 0.89 miles (Weston Road) 0.57 miles .....	1.46	1965	1.00	0.46	14,192

401	Macdonald-Cartier Freeway from existing Leslie Street easterly to immediately west of Victoria Park Avenue including Don Valley Parkway interchange .....	1.73	1965	1.66	0.07	15,842 <sup>1</sup>
401	Macdonald-Cartier Freeway from west of Hogg's Hollow to east of Bayview Avenue Interchange .....	1.85	1965	1.08	0.18	15,161 <sup>1</sup>
401	Macdonald-Cartier Freeway from East end of Bayview Avenue Interchange to immediately east of Don River, including Leslie Street Interchange ..	1.97	1965	0.96	0.34	7,004 <sup>1</sup>
401	Macdonald-Cartier Freeway and Islington Avenue Interchange from 0.3 miles west of Humber River to Kipling Avenue .....	1.98	1965	0.87	0.85	19,645 <sup>1</sup>
2	From Highway Number 12 in Whitby easterly to Oshawa West Limits ....	2.36	1966	1.88	0.48	6,633 <sup>2</sup>
401	Macdonald-Cartier Freeway, from west of Victoria Park Avenue Interchange to east of Warden Avenue Interchange .....	1.30	1966	0.65	0.54	14,626 <sup>3</sup>
48	From 1.0 miles south of Port Bolster easterly to New Highway 12-Old Highway 48 from 1.0 miles south of Port Bolster to 1.0 miles south of Beaverton .....	11.69	1966	9.24	2.45	5,319 <sup>4</sup>
27	Intersections at Rexdale Boulevard and Albion Road .....	2.25	1967	Nil	2.25	14,187 <sup>5</sup>
401	Macdonald - Cartier Freeway Interchanges at: Lansing Road, Liverpool Road, Church Street, Brock Street, Thickson Road, Park Road and Ritson Road .....	16.60	1966	8.30	8.30	3,496 <sup>6</sup>
10	From Burnhamthorpe Road northerly to Macdonald-Cartier Freeway .....	3.00	1966	Nil	3.00	28,179 <sup>7</sup>
122	Highway 2 northerly to Queen Elizabeth Way .....	1.19	1966	Nil	1.12	29,236 <sup>8</sup>
	Commuter Stations, Guildwood, Eglinton, Scarborough .....		1966			324 <sup>9</sup>
	Commuter Stations, Bronte, Oakville, Clarkson, Port Credit, Long Branch, Mimico .....		1966			76 <sup>10</sup>
10	From 0.3 miles south of Highway 401 northerly 1.16 miles including widening of structure at Highway 401 .....	1.16	1967	Nil	1.16	13,560 <sup>11</sup>
401	Macdonald-Cartier Freeway from east of Kipling Avenue to west of Dixon Road Martingrove Road Interchange ..	3.09	1967	Nil	1.02	18,481 <sup>12</sup>
QEW	From east of Highway 27 to Royal York Road including service roads north and south of Queen Elizabeth Way .....	3.21	1967	Nil	0.83	18,674 <sup>13</sup>
QEW & 27	From West of Highway 27 Interchange to west of Etobicoke Creek. Highway 27 from south of North Queen Street to C.P.R. ....	2.45	1967	Nil	0.54	17,419 <sup>14</sup>
48	Intersection Reconstruction at Steeles Ave. ....	0.42	1967	Nil	0.42	3,810 <sup>15</sup>
7	Little Rouge Bridge 3.0 miles east of Highway 48 .....	0.42	1967	Nil	0.06	240 <sup>16</sup>
48	Pefferlaw Brook Bridge 7.2 miles east of Sutton .....	0.42	1967	Nil	0.10	755 <sup>17</sup>

401	Dixie Road Interchange .....	1.84	1967	Nil	1.01	4,877 <sup>15</sup>
9 & 10	Highway 10, 2.5 miles south of Caledon northerly to 0.2 miles south of Orangeville. Highway 9 from High- way 10 easterly 0.9 miles — Caledon Patrol Yard .....	9.37	1967	Nil	1.31	2,652 <sup>16</sup>
	TOTALS .....	69.76		25.64	26.49	254,388

<sup>1</sup>H.L. 1, 3, 6 and Modified H.L. 6<sup>2</sup>H.L. 1 and 5<sup>3</sup>H.L. 1, 3 and 6<sup>4</sup>H.L. 3, 4 and Hot Mix Sand Asphalt<sup>5</sup>H.L. 4, 6 and Hot Mix Sand Asphalt<sup>6</sup>H.L. 3 and 6<sup>7</sup>H.L. 1, 6 and Hot Mix Sand Asphalt<sup>8</sup>H.L. 1, 3, 6 and Hot Mix Sand Asphalt<sup>9</sup>H.L. 6, 3, 8<sup>10</sup>H.L. 1, 3 and 6<sup>11</sup>H.L. 3, 5, 6 and Hot Mix Asphalt<sup>12</sup>H.L. 3, 4 and Hot Mix Sand Asphalt<sup>13</sup>H.L. 3<sup>14</sup>H.L. 4<sup>15</sup>H.L. 1, 6 and Hot Mix Sand Asphalt<sup>16</sup>H.L. 4

### Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		TONS PLACED	
Var.	Various isolated patching throughout district — Cold mix .....	85.04	
Var.	Various isolated patching throughout district — Hot mix patching .....	1,184.67	
	TOTAL .....	1,269.71	

### Bituminous Surface Treatment

Hwy. No.	LOCATION	TONS OF DIX SEAL
401	Highway 27 to Milton .....	54

### Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
401	Victoria Park Avenue Underpass, North York Township, Lot 12, Concession IV E.Y.S., Scarborough Township, Lot 35 Concession II .....	1966	1967	Oct. 12 1967	Prestressed cast in place deck
401	Warden Avenue Underpass, Scarborough Township Lots 32, 33, Concession II ....	1966	1967	Sept. 27 1967	Prestressed cast in place deck
401	Bridge Number 3, North York Township, Lot 14, Concession 2 .....	1967	1967	—	Steel beam and slab
401	Leslie and C.N.R. Trestle, North York Township, Lot 14, Concession 2 .....	1965	1967	—	Steel beam and slab

401	Structure Number 2, North York Township, Lot 13, Concession 1, E.Y.S. ....	1965	1967	Nov. 1967	Steel beam <sup>6</sup> and slab
2	Rouge River, Pickering Township Lot 33, Range III B.F. ....	1965	1967	—	Prestressed <sup>6</sup> beams continuous
2	C.P.R. Overhead Bridge, Whitby .....	1966	1967	—	Steel beam <sup>7</sup>
401	Humber River Bridge 5, North York Township, Lot 10, Concession V. Etobicoke Township, Lot 25, Concession B .....	1965	1967	—	Steel beam <sup>8</sup>
2	Sheridan Creek Bridge Number 1, Toronto Township, Lot 30, Concession II and III, SDS .....	1967	1967	Sept. 1967	Rigid frame <sup>9</sup>
2	Sheridan Creek Bridge Number 2, Toronto Township, Lots 30 and 31, Concession II, SDS .....	1967	1967	Sept. 1967	Rigid frame <sup>10</sup>
10	Highway 401 Underpass, Toronto Township Lots 6 to 9, Concession 1 .....	1967	1967	Dec. 1 1967	Rigid frame <sup>11</sup>
401	Martingrove Overpass Number 3, Etobicoke Township Lots 21 and 22, Concession 1 .....	1967	1967	—	Prestressed <sup>12</sup> concrete box beam with concrete deck slab
401	Martingrove Overpass Number 2, Etobicoke Township, Lots 21 and 22, Concession 1 .....	1967	1967	—	Prestressed <sup>13</sup> concrete beams with concrete deck slab
401	Eastbound Belfield Extension Bridge Number 2, Etobicoke Township, Lot 24, Concession "A" F.T.H. ....	1966	1967	—	Prestressed <sup>14</sup> in place post tensioned
401	Bridge Number 1, C.N.R. Overpass, Etobicoke Township, Lot 24, Concession "A" F.T.H. ....	1966	1967	Dec. 1967	Rigid frame <sup>15</sup>
401	Islington Avenue Underpass, Bridge Number 4, Etobicoke Township, Lot 25, Concession "A" F.T.H. ....	1966	1967	Nov. 1967	Prestressed <sup>16</sup> in place post tensioned

<sup>1</sup>Length 404 L.F., width 94 L.F., spans — 2 at 127 L.F., 1 at 142 L.F.

<sup>2</sup>Length 416 L.F., width 72 L.F., spans — 2 at 130 L.F., 1 at 148 L.F.

<sup>3</sup>Length 394 L.F., width 108 L.F., spans — 5 at 78 L.F.

<sup>4</sup>Length 875 L.F., width 108 L.F., spans — 16 from 47 feet to 67 feet

<sup>5</sup>Length 107 L.F., width 33 feet 6 inches, spans — 1 at 107 L.F.

<sup>6</sup>Length 769 L.F., width 57 L.F., spans — 1 at 95 L.F., 2 at 115 L.F., 2 at 130 L.F., 1 at 140 L.F.

<sup>7</sup>Length 154 L.F., width 48 L.F., spans — 2 at 31 L.F.

<sup>8</sup>Length 300 L.F., width 136 L.F., spans 4 at 300 L.F.

<sup>9</sup>Length 90 L.F., width 48 L.F., spans — 1 at 50 L.F.



<sup>10</sup>Length 55 L.F., width 96 L.F., spans — 1 at 50 L.F.

<sup>11</sup>Length 130 L.F., width 40 L.F., spans — 1 at 114 L.F.

<sup>12</sup>Length 90 L.F., width 25 L.F., spans — 1 at 43 L.F., 1 at 46 L.F.

<sup>13</sup>Length 87 L.F., width 25 L.F., spans — 1 at 43 L.F., 1 at 44 L.F.

<sup>14</sup>Length 581 L.F., width 45 L.F., spans — 1 at 105 L.F., 1 at 175 L.F., 1 at 200 L.F., 1 at 99 L.F.

<sup>15</sup>Length 45 L.F., width 221 L.F., spans — 1 at 40 L.F.

<sup>16</sup>Length 509 L.F., width 62 L.F., spans 1 at 138 L.F., 1 at 133 L.F., 1 at 104 L.F., 1 at 130 L.F.

### Concrete Base Pavement, Asphalt Top

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. THIS FISCAL YEAR			TONS PLACED	PAVEMENT WIDTH
				PREVIOUS YEARS	MILES COMPL.			
401	Macdonald-Cartier Freeway and Weston Road Interchange—From Wendell Avenue to 0.30 miles west of Humber River — (Mac- donald-Cartier Freeway) 0.89 miles (Weston Road) 0.57 miles	1.46	1965	0.53	0.93		36	Various
401	Macdonald-Cartier Freeway from existing Leslie Street easterly to immediately west of Victoria Park Avenue, including Don Valley Parkway Interchange .....	1.73	1965	1.16	0.57		1,144	Various
401	Macdonald-Cartier Freeway from west of Hogg's Hollow to east limits of Bayview Avenue Inter- change .....	1.85	1965	0.48	0.76		9,388	Various
401	Macdonald-Cartier Freeway from east end of Bayview Avenue Inter- change to immediately east of Don River including Leslie Street Interchange .....	1.97	1965	0.24	0.84		7,724	Various
401	Macdonald-Cartier Freeway and Islington Avenue Interchange from 0.3 miles west of Humber River to Kipling Avenue .....	1.98	1965	0.47	1.49		7,644	Various
401	Macdonald-Cartier Freeway from west of Victoria Park Avenue Interchange to east of Warden Avenue Interchange .....	1.30	1966	0.65	0.45		10,899	Various
401	Macdonald-Cartier Freeway from east of Kipling Avenue to west of Dixon Road, Martingrove Road Interchange .....	3.09	1967	—	1.48		3,010	Various
QEW	From east of Highway 27 to Royal Road including Service Roads north and south of Queen Eliza- beth Way .....	3.21	1967	—	0.64		33,590	Various
QEW & 27	From west of Highway 27/Queen Elizabeth Way Interchange to west of Etobicoke Creek—High- way 27 from south of North Queen Street to Canadian Pacific Railway .....	2.45	1967	—	0.93		2,494	Various
TOTALS .....		19.04		3.53	8.09		75,929	

<sup>1</sup>Reinforced 7 inches and unreinforced 8 inches

<sup>2</sup>Reinforced 7 inches

<sup>3</sup>Reinforced 7 inches and unreinforced 9 inches

<sup>4</sup>Reinforced 8 inches

## Concrete Pavement

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. THIS FISCAL YEAR				SQ. YDS. PAVEMENT PLACED	WIDTH
				PREVIOUS YEARS	MILES COMPL.				
401	Macdonald - Cartier Freeway and Weston Road Interchange—From Wendell Avenue to 0.30 miles west of Humber River (Macdonald Cartier Freeway) 0.89 miles (Weston Road) 0.57 miles	1.46	1965	1.26	0.20			36,393	Various <sup>1</sup>
401	Macdonald-Cartier Freeway from existing Leslie Street easterly to immediately west of Victoria Park Avenue including Don Valley Parkway Interchange	1.73	1965	1.30	0.43			62,966	Various <sup>2</sup>
401	Macdonald-Cartier Freeway from west of Hogg's Hollow to east limits of Bayview Avenue Interchange	1.85	1965	0.70	0.82			76,490	Various <sup>2</sup>
401	Macdonald-Cartier Freeway from east end of Bayview Avenue Interchange immediately east of Don River including Leslie Street Interchange	1.97	1965	0.96	0.56			45,557	Various <sup>3</sup>
401	Macdonald - Cartier Freeway and Islington Avenue Interchange from 0.3 miles west of Humber River to Kipling Avenue	1.98	1965	0.79	1.19			83,378	Various <sup>3</sup>
401	Macdonald-Cartier Freeway from west of Victoria Park Avenue Interchange to east of Warden Avenue Interchange	1.30	1966	0.65	0.65			83,442	Various <sup>2</sup>
	TOTALS	10.29		5.66	3.85			388,226	

<sup>1</sup>Reinforced 9 inches and Unreinforced 6 inches and 3 inches<sup>2</sup>Reinforced 9 inches<sup>3</sup>Reinforced 9 inches and Unreinforced

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR		"A"	"B"	STONE
		MILES COMPL.	TONS PLACED			
401	Macdonald-Cartier Freeway and Weston Road Interchange from Wendell Avenue to 0.3 miles west of Humber River — (Macdonald-Cartier Freeway) 0.89 miles (Weston Road) 0.57 miles	0.28	4,644	4,644	—	—
401	Macdonald-Cartier Freeway from existing Leslie Street easterly to immediately west of Victoria Park Avenue — including Don Valley Parkway Interchange	0.24	69,722	41,321	27,349	1,052
401	Macdonald-Cartier Freeway from west of Hogg's Hollow to east of Bayview Avenue Interchange	0.63	116,481	70,690	44,122	1,669

401	Macdonald-Cartier Freeway from east end of Bayview Avenue interchange to immediately east of Don River—including Leslie Street Interchange .....	0.56	97,098	42,925	20,211	33,962
2	Rouge River Bridge 0.8 miles east of Metro Toronto East Limits .....	0.25	1,442	154	1,288	—
401	Macdonald-Cartier Freeway and Islington Avenue Interchange — From 0.3 miles west of Humber River to Kipling Avenue .....	0.98	195,096	90,284	104,216	596
2	From Highway 12 in Whitby easterly to Oshawa West Limits .....	—	3,989	2,139	1,850	—
401	Macdonald-Cartier Freeway from west of Victoria Park Avenue Interchange to east of Warden Avenue Interchange .....	0.43	68,762	59,139	9,623	—
27	Intersections at Rexdale Blvd. and Albion Road .....	2.02	104,906	36,300	68,606	—
401	Macdonald-Cartier Freeway Interchanges at: Lansing Road, Liverpool Road, Church Street, Brock Street, Thicksen Road, Park Road and Ritson Road .....	16.60	41,981	21,593	20,388	—
10	From Burnhamthorpe Road northerly to Macdonald-Cartier Freeway .....	2.82	206,543	78,212	128,331	—
122	Highway 2, northerly to Queen Elizabeth Way .....	1.12	130,711	43,716	86,995	—
	Commuter Stations: Bronte, Oakville, Clarkson, Port Credit, Long Branch and Mimico .....	—	24,789	—	—	24,789
10	From 0.3 miles south of Highway 401 northerly 1.16 miles — including widening of Structure at Highway 401 .....	1.10	115,107	55,100	60,007	—
401	Macdonald-Cartier Freeway from east of Kipling Avenue to west of Dixon Road Martingrove Road Interchange .....	1.64	181,564	93,920	87,485	159
QEW	From east of Highway 27 to Royal York Road including Service roads north and south of Queen Elizabeth Way .....	1.86	331,119	241,675	87,704	1,740
QEW	From West of Highway 27 Interchange to & 27 west of Etobicoke Creek — Highway 27 from south of North Queen Street to Canadian Pacific Railway .....	1.96	213,601	54,925	147,016	11,660
48	Intersection reconstruction at Steeles Avenue .....	0.42	15,689	5,112	10,577	—
48	Pefferlaw Brook Bridge 7.2 miles east of Sutton .....	0.16	5,527	3,909	1,618	—
401	Macdonald-Cartier Freeway intersection of westbound ramp at Keele Street .....	—	1,260	530	730	—
401	Dixie Road Interchange .....	1.75	14,938	13,683	1,255	—
9 & 10	Highway 10 — 2.5 miles south of Caledon northerly to 0.2 miles south of Orangeville — Highway 9, from Highway 10 easterly 0.9 miles — Caledon Patrol Yard .....	3.47	5,017	3,402	1,615	—
	TOTALS .....	38.29	1,949,986	963,373	910,986	75,627

### Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR TONS PLACED
Var.	Various locations throughout district .....	10,673.35

## Grading and Culverts

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
401	Macdonald-Cartier Freeway from west of Hogg's Hollow to east of Bayview Avenue Interchange .....	1.85	1965	1.38	0.47
401	Macdonald-Cartier Freeway from west of Victoria Park Avenue Interchange to east of Warden Avenue Interchange .....	1.30	1966	—	1.30
48	From 1.0 miles south of Port Bolster easterly to New Highway 12 — Old Highway 48 from 1.0 miles south of Port Bolster to 1.0 miles south of Beaverton .....	11.69	1966	—	11.69
401	Macdonald-Cartier Freeway Interchanges at: Lansing Road, Liverpool Road, Church Street, Brock Street, Thickson Road, Park Road and Ritson Road .....	16.60	1966	—	16.60
10	From Burnhamthorpe Road northerly to Macdonald-Cartier Freeway .....	3.00	1966	—	3.00
122	Highway 2, northerly to Q.E.W. ....	1.19	1966	—	1.19
	Commuter Stations: Guildwood, Eglinton, Scarborough .....	—	1966	—	—
	Commuter Stations: Bronte, Oakville, Clarkson, Port Credit, Long Branch and Mimico ..	—	1966	—	—
10	From 0.3 miles south of Highway 401 northerly 1.16 miles including widening of structure at Highway 401 .....	1.16	1967	—	1.16
401	Macdonald-Cartier Freeway from east of Kipling Avenue to west of Dixon Road/Martingrove Road Interchange .....	3.09	1967	—	2.84
QEW	From east of Highway 27 to Royal York Road including Service Roads north and south of Queen Elizabeth Way .....	3.21	1967	—	2.89
QEW & 27	From West of Highway 27 Interchange to west of Etobicoke Creek, Highway 27 from south of North Queen Street to Canadian Pacific Railway .....	2.45	1967	—	1.84
48	Intersection reconstruction at Steeles Avenue ..	0.42	1967	—	0.42
7	Little Rouge Bridge 3.0 miles east of Highway 48 .....	0.42	1967	—	0.29
48	Pefferlaw Brook Bridge 7.2 miles east of Sutton ..	0.42	1967	—	0.10
401	Dixie Road Interchange .....	1.84	1967	—	1.75
9 & 10	Highway 10 — 2.5 miles south of Caledon northerly to 0.2 miles south of Orangeville — Highway 9 from Highway 10 easterly 0.9 miles — Caledon Patrol Yard .....	9.37	1967	—	0.19
	TOTALS .....	58.01		1.38	45.73

## Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
401	Macdonald-Cartier Freeway from west of Hogg's Hollow to east end of Bayview Avenue Interchange ....	1.85	1965	1.09	0.63	116,812



401	Macdonald-Cartier Freeway from west of Victoria Park Avenue Interchange to east of Warden Avenue Interchange .....	1.30	1966	0.87	0.43	68,762
27	Intersections at Rexdale Blvd. and Albion Road .....	2.25	1967	—	2.02	104,906
401	Macdonald-Cartier Freeway Interchanges at: Lansing Road, Liverpool Road, Church Street, Brock Street, Thickson Road, Park Road and Ritson Road .....	16.60	1966	—	16.60	41,981
10	From Burnhamthorpe Road northerly to Macdonald-Cartier Freeway .....	3.00	1966	0.18	2.82	206,543
122	Highway 2 northerly to Queen Elizabeth Way .....	1.19	1966	0.07	1.12	130,711
	Commuter Stations: Bronte, Oakville, Clarkson, Port Credit, Long Branch and Mimico .....	—	1966	—	—	—
	Commuter Stations: Guildwood, Eglinton, Scarborough .....	—	1966	—	—	—
10	From 0.3 miles south of Highway 401 northerly 1.16 miles — including widening of structure at Highway 401 .....	1.16	1967	—	1.10	115,107
401	Macdonald-Cartier Freeway from east of Kipling Avenue to west of Dixon Road/Martingrove Interchange .....	3.09	1967	—	1.64	181,405
QEW	From east of Highway 27 to Royal York Road — including service roads north and south of Queen Elizabeth Way .....	3.21	1967	—	1.86	329,379
QEW	From west of Highway 27 Interchange & 27 to west of Etobicoke Creek, Highway 27 from south of North Queen Street to Canadian Pacific Railway .....	1.96	1967	—	1.96	201,941
40	Intersection Reconstruction at Steeles Avenue .....	0.42	1967	—	0.42	15,689
48	Pefferlaw Brook Bridge 7.2 miles east of Sutton .....	0.42	1967	—	0.16	5,527
401	Dixie Road Interchange .....	1.84	1967	—	1.75	14,938
9 & 10	Highway 10 — 2.5 miles south of Caledon northerly to 2.0 miles south of Orangeville — Highway 9 from Highway 10 easterly 0.9 miles — Caledon Patrol Yard .....	9.37	1967	—	3.47	5,017
401	Macdonald-Cartier Freeway intersection of westbound ramp, at Keele Street .....	—	1967	—	—	1,260
	TOTALS .....	47.66		2.21	35.98	1,539,978

### New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETE
12	Manchester Patrol Yard .....	Garage and Patrol Office	Headquarters	1967	1968
400	Maple Patrol Yard .....	Salt Shed	Salt Storage	1967	1967
47	Dagmar — Uxbridge Township .....	Telecom- munication	Radio Repeater	1967	1967
401	Kennedy Road Yard (Relocation) ..	Salt Shed	Salt Storage	1967	1967

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	5	—	—
Calcium dust layer on gravel roads .....	—	Nil	—
Calcium for de-icing roads .....	—	Nil	—
Development roads built .....	—	Nil	—
Off-road parks maintained .....	Nil	—	—
Roads snowploughed and kept open, King's highways (equivalent 2 lane mileage) .....	—	—	854
Roads snowploughed and kept open, secondary highways .....	Nil	—	—
Roadside picnic places maintained .....	4	—	—
Routine maintenance, King's highways (equivalent 2 lane mileage) .....	—	—	854
Routine maintenance, secondary highways .....	Nil	—	—
Salt for de-icing roads (raw) .....	—	44,962	—
Salt in sand, stockpiled .....	—	4,652	—
Sand for winter maintenance .....	—	83,076	—
Scale houses maintained .....	6	—	—
Seeding by department's forces .....	(acres) 94	—	—
Shrubs received and planted this year .....	5,218	—	—
Signs erected or replaced .....	18,450	—	—
Snow fence erected, dismantled, stored .....	—	—	66
Snow hedges planted this year .....	Nil	—	—
Traffic lights installed this year .....	10	—	—
Weed control .....	—	—	1,466
Zone painting on King's highways .....	(gals.) 23,800	—	—
Zone painting on secondary highways .....	(gals.) Nil	—	—

**DISTRICT No. 7 — PORT HOPE****D. P. Collins, P.Eng., District Engineer****CONSTRUCTION**

This fiscal year 1967-68 brought the completion of nine carry over contracts and the completion of two new 1967 contracts. Work also started on 5 new contracts.

*Completed Work on carry over:*

On Highways 115 and 28, 2 structures and interchange started at this location south of Peterborough.

On Highway 7, clearing and grubbing commenced for 7.5 miles east of Peterborough city limits.

On Highway 49, granular bases and concrete paving for 3.6 miles northerly from Roblin Mills.

On Highway 2, grading, granular base, hot mix paving and structure CN and CP railway crossing 2 miles east of Cobourg.

On Highway 28, grading, drainage, granular base and hot mix paving for 1.8 miles northerly from S. Monaghan.

On Highway 46, hot mix paving for 9.4 miles easterly from Highway 505.

On Highway 28, grading, drainage, granular base, hot mix paving and 2 structures for 1.6 miles over Trent Canal and Perry Creek Burleigh Falls north.

On Highway 28, grading, drainage, granular base, hot mix paving and bridge improvement for 1.4 miles over Trent Canal at Young's Point.



**Hwy. 2 — Railway overpass east of Cobourg. Photo 9592—(Port Hope)**



On Highway 401, resurfacing for 7.0 miles commencing 2.8 miles east of Oshawa.  
*Uncompleted Work on carry over:*

On Highway 2, structure and approaches for 1.0 mile over Trent River in town of Trenton.

On Highway 507, grading, drainage, granular base for 6.3 miles northerly from Highway 28 south of Lakefield.

*New Work completed in 1967:*

On Highway 115, resurfacing for 7.1 miles westerly from Highway 28 south of Peterborough.

On Highway 401, resurfacing, pavement widening at interchanges and bridge waterproofing on 2.8 miles Oshawa easterly.

On Highways 7 TCH and 7B, grading, drainage and hot mix paving at intersection known as Fowler's Corners 1.2 miles.

On Highway 33, detour construction in town of Trenton.

*New Work started and not completed in 1967:*

On Highway 2, grading, drainage, granular base, hot mix paving and 2 structures for 1.2 miles Bowmanville east.

On Highway 7 TCH, grading, drainage, granular base and hot mix paving Peterborough easterly 7.5 miles.

On Highway 7A, grading, drainage, granular base for 5.8 miles easterly from Bethany.

On Highway 30, 1 structure and approach Trent Canal Bridge for 1.2 miles at the Village of Trent River.

On Highway 45, 2 structures and approaches Trent River Bridge and Head Race Bridge for 0.2 miles at the Village of Hastings.

## MAINTENANCE

Port Hope District continued to be one of the test areas for newly developed concepts of Maintenance Management. This involved the initial attempt of scheduling day to day maintenance work on the patrols. One Patrol Supervisor's group of 4 patrols started scheduling in June. The same area was used to test many new methods and some different types of equipment. Improved use of men and existing equipment resulted, however, no new pieces of equipment were assigned to the District.

The Day Labour Program of reconstructing Highway No. 503 continued this past year. Two twin pipe arches replaced old structures on the section of highway between Uphill and Norland. In addition to this, 1.5 miles of Highway 503 were reconstructed immediately east of Uphill.

62.5 miles of Surface Treating was carried out on Highways 503, 35, 507 and 46. The usual pavement patching, sand and  $\frac{5}{8}$ " crushed gravel stockpile contracts were completed. Two Grass Mowing Contracts on Highway 401 were completed last year for the first time in three years. These mowing contracts were considered to be quite successful. In addition to the crushed gravel stockpile contracts, 23,000 tons of material was placed directly on the shoulders, by contract. This was very successful, costing less than half what it cost to stockpile and place by our own forces.



The Quinte Skyway (Kingston District) and 3.6 miles of Highway 49 to the south were opened early in September. New bridges and approaches replaced existing structures on Highway 28 at Young's Point and at Burleigh Falls.

One Patrol Yard at Coboconk at the junction of Highways 35 and 46 was developed.

The Sign Shop erected or replaced 10,889 signs; 736 miles of highways were Zone Painted by the District Crew.

The Forestry Crew seeded 114 acres during the year. They also continued a Weed Control Program covering 491 miles of highway.

The Bridge Crew repainted 13 bridges and carried out minor repairs on various bridges throughout the District.

### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
				COMPL. PREV. YRS.		
2	Port Hope to Oshawa (Various) .....	Nil	1967	Nil	Nil	805.00 <sup>1</sup>
2	Port Hope to Trenton (Various) .....	Nil	1967	Nil	Nil	517.00 <sup>1</sup>
2	C.N.R. and C.P.R. Overhead 2 miles east of Highway 45 .....	0.50	1966	0.16	0.34	2,309.36 <sup>2</sup>
2	Trent River Bridge—Town of Trenton	1.00	1966	0.55	0.45	1,892.00 <sup>2</sup>
7TC	Fowlers Corners to junction of High- way 46 (Various) .....	Nil	1967	Nil	Nil	1,475.00 <sup>1</sup>
7TC	Intersection Improvement at Fowler's Corners junctions 7 and 7B .....	1.21	1967	Nil	1.21	4,889.60 <sup>2</sup>
7TC	Peterborough By-Pass easterly 7.04 miles and westerly 0.50 miles .....	7.54	1967	Nil	1.58	10,815.00 <sup>3</sup>
7TC	Havelock to Indian River (Various) ..	Nil	1967	Nil	Nil	950.00 <sup>1</sup>
28	Port Hope to Lakefield (Various) .....	Nil	1967	Nil	Nil	1,337.00 <sup>1</sup>
28	South Monaghan north 1.8 miles .....	1.80	1967	Nil	1.80	6,045.65 <sup>2</sup>
28	Junction Highways 115 and 28 includ- ing 2 Structures .....	0.70	1966	0.25	0.45	6,630.00 <sup>2</sup>
28	0.4 miles south of Trent Canal Bridge in Young's Point northerly 1.0 miles	1.00	1967	Nil	1.00	4,302.77 <sup>2</sup>
28	Junction Highways 28 and 36 includ- ing 2 structures at Burleigh Falls ....	1.67	1967	Nil	1.67	7,331.34 <sup>2</sup>
30	Brighton to Campbellford (Various) ..	Nil	1967	Nil	Nil	115.00 <sup>1</sup>
33	Trenton to Hillier (Various) .....	Nil	1967	Nil	Nil	115.00 <sup>1</sup>
35 & 115	Junction Highway 2 to junction of Highway 35 (Various) .....	Nil	1967	Nil	Nil	506.00 <sup>1</sup>
35	Junction Highway 115 to Haliburton County Line (Various) .....	Nil	1967	Nil	Nil	2,627.00 <sup>1</sup>
45	Baltimore to Fenella (Various) .....	Nil	1967	Nil	Nil	655.00 <sup>1</sup>
45	Trent River and Head Race Bridges at Hastings .....	0.17	1967	Nil	0.05	124.00 <sup>2</sup>
46	Junction Highway 7 to junction High- way 48 (Various) .....	Nil	1967	Nil	Nil	230.00 <sup>1</sup>
46	Secondary Highway 505 east to junc- tion of Highway 35 .....	9.40	1967	Nil	9.40	21,275.71 <sup>2</sup>
121	Junction Highway 35 to south limits of Fenelon Falls (Various) .....	Nil	1967	Nil	Nil	515.00 <sup>1</sup>
401	Oshawa to Trenton .....	Nil	1967	Nil	Nil	2,398.08 <sup>1</sup>
507	Highway 28 north 6.3 miles .....	0.34	1967	Nil	0.34	1,526.00 <sup>2</sup>
TOTALS .....		25.33		0.96	18.29	79,386.51

<sup>1</sup>Completed (Patching)

<sup>2</sup>Completed

<sup>3</sup>Not Completed

**Bituminous Mulch and Cold Mix**

Hwy. No.	LOCATION	MILES IN JOB	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
505	Victoria Road northerly .....	0.7	2.5	0.7	1,025

**Bituminous Prime on Gravel Roads**

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
7A	Junction Highway 115 west 6.0 miles .....	6.0	11,512.50	720.48 <sup>1</sup>
503	Uphill easterly (various locations) .....	3.5	6,715.63	420.28 <sup>1</sup>
503	Sebright southerly 8.2 miles .....	8.2	15,733.75	984.66 <sup>1</sup>
503	Norland easterly 0.5 miles .....	0.5	959.37	60.04 <sup>1</sup>
505	Uphill to Victoria Road .....	10.5	20,147.00	1,260.91 <sup>1</sup>
SERVICE CENTRES LOCATIONS				
401	E-1. North side of Highway 401 .....	0.8	1,535.00	96.06 <sup>1</sup>
401	E-2. South side of Highway 401 .....	0.6	1,151.25	72.05 <sup>1</sup>
401	E-3. North side of Highway 401 .....	0.6	1,151.25	72.05 <sup>1</sup>
401	E-4. South side of Highway 401 .....	0.6	1,151.25	72.05 <sup>1</sup>
TOTALS .....		31.3	60,057.00	3,758.58

<sup>1</sup>Using 1.9 Conversion Factor**Bituminous Resurfacing of Old Pavement**

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
33	Detour for C.N.R. Subway at Trenton. Contract No. 67-164 .....	0.90	1,466.01 <sup>1</sup>
Old	North and west from Lindsay Town Boundary. Contract No.		
35B	I.B.-11-67 .....	1.50	642.05 <sup>1</sup>
115	Highway 28 westerly 7.5 miles. Contract No. 67-502 .....	7.50	13,535.70 <sup>1</sup>
401	Wilson Street Oshawa easterly 2.78 miles. Contract No. 67-31 .....	2.78	16,046.28 <sup>1</sup>
401	3.8 miles east of Oshawa easterly 7.0 miles. Contract No. 66-507 .....	7.00	25,472.90 <sup>1</sup>
TOTALS .....		19.68	57,162.94

<sup>1</sup>Completed**Bituminous Surface Treatment**

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS CHIPS USED
35	Junction of New Highway 46 to Haliburton County Line .....	8.60	27,894.87	1,096.69
46	Junction of Highway 7 to Eldon Station .....	12.20	39,571.78	1,555.78
Old	Secondary Highway 505 east to junction Highway New 46 .....	6.60	10,870.00	516.88
503	Kinmount to Norland .....	9.50	30,814.10	1,211.46
503	Norland westerly 8.0 miles .....	8.00	25,948.72	1,020.18
503	Junction of Highway 505 to Sebright .....	9.80	31,787.17	1,249.72
507	Selwyn north to south junction Highway 36 .....	7.90	25,624.36	1,007.42
TOTALS .....		62.60	192,511.00	7,658.13

## Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
2	C.N.R. and C.P.R. Overhead, 2 miles east of Highway 45. Contract No. 66-151 ....	1966	1967	Yes	Reinforced Concrete and Post Stressed Deck <sup>1</sup>
28	Perrys Creek Bridge, Burleigh Falls. Con- tract No. 66-215 .....	1967	1967	Yes	Reinforced Concrete and Pre- stressed Beams <sup>2</sup>
28	Trent Canal Bridge, Burleigh Falls. Con- tract No. 66-215 .....	1966	1967	Yes	Reinforced Concrete and Pre- stressed Beams <sup>3</sup>
28	Cavanville Creek Bridge, 0.4 miles north of junction Highways 115 and 28. Contract No. 66-60 .....	1966	1967	Yes	Reinforced Concrete and Post Stressed Deck <sup>4</sup>
115	Highway 28 Overpass, junction Highways 115 and 28. Contract No. 66-60 .....	1966	1967	Yes	Reinforced Concrete and Post Stressed Deck <sup>5</sup>

<sup>1</sup>Total length 587 feet, width 39 feet, clearance 23 feet 6½ inches, 5 spans — 2 at 75 feet, 2 at 161 feet, 1 at 115 feet

<sup>2</sup>Total length 188 feet, width 53 feet 7 inches to 62 feet, clearance 22 feet 6 inches, 3 spans — 2 at 50 feet, 1 at 88 feet

<sup>3</sup>Total length 168 feet, width 42 feet, clearance 32 feet, 3 spans — 2 at 40 feet, 1 at 88 feet

<sup>4</sup>Total length 98 feet, width 43 feet 9¼ inches to 49 feet 1¾ inches, clearance 9 feet 6 inches, 3 spans — 2 at 28 feet, 1 at 42 feet

<sup>5</sup>Total length 99 feet, width 52 feet, clearance 15 feet 3½ inches, 3 spans — 2 at 33 feet, 1 at 66 feet

## Concrete Pavement

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	SQ. YDS. PAVEMENT PLACED	WIDTH
49	From Roblin Mills northerly to Quinte Skyway Bridge. Contract No. 66-169 .....	3.89	1967	Nil	3.89	58,044	24 feet

## Crushed Gravel and Stone on Roads by Contract

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	C.N.R. and C.P.R. Overhead 2 miles east of Highway 45. Contract No. 66-151 .....	0.26	6,675.87 <sup>1</sup>
2	Trenton River Bridge, Town of Trenton. Contract No. 65-314 .....	0.23	776.00 <sup>1</sup>
7TC	Intersection Improvement at Fowler's Corners junction 7 and 7B. Contract No. 67-34 .....	1.21	9,889.28 <sup>1</sup>
7TC	Peterborough By-Pass easterly 7.04 miles and westerly 0.50 miles. Contract No. 67-17 .....	4.61	87,401.00 <sup>1</sup>
7A	Bethany easterly to Highway 115. Contract No. 67-61 .....	3.77	87,401.00 <sup>1</sup>
28	D.H.O. Yard Port Hope at junction of Highways 401 and 28. Contract No. 67-531 .....	Nil	4,996.35 <sup>2</sup>
28	South Monaghan north 1.8 miles. Contract No. 66-186 .....	0.20	11,760.96 <sup>1</sup>
28	Junction Highway 115 and 28 including 2 structures. Contract No. 66-60 .....	0.33	14,996.77 <sup>1</sup>
28	D.H.O. Patrol Yard at junction Highways 115 and 28. Contract No. 67-532 .....	Nil	4,985.53 <sup>2</sup>
28	0.4 miles south of Trent Canal Bridge in Young's Point northerly 1.0 miles. Contract No. 66-284 .....	1.00	17,019.78 <sup>1</sup>
28	D.H.O. Yard 1.3 miles north of Young's Point. Contract No. 67-532 .....	Nil	4,979.58 <sup>2</sup>
28	Junction Highway 28 and 36 including 2 structures at Burleigh Falls. Contract No. 66-215 .....	1.67	19,427.83 <sup>1</sup>
30	D.H.O. Yard Brighton at junction Highway 401 and 30. Contract No. 67-530 .....	Nil	3,993.26 <sup>2</sup>
30	D.H.O. Patrol Yard 3 miles north of Codrington. Contract No. 67-530 .....	Nil	3,993.46 <sup>2</sup>
33	Detour for C.N.R. Subway at Trenton. Contract No. 67-164 .....	0.90	2,623.75 <sup>3</sup>
35 & 115	North Newcastle Entrance to junction Highways 35 and 115 (Various). Contract No. 67-527 .....	Nil	4,995.91 <sup>4</sup>
35	1.5 miles north of junction Highways 35 and 115. Contract No. 67-527 .....	Nil	6,994.43 <sup>2</sup>
35	0.5 miles south of junction of Highways 7 and 35 (Lindsay Patrol Yard). Contract No. 67-527 .....	Nil	5,000.00 <sup>2</sup>
45	Trent River and Head Race Bridges at Hastings. Contract No. 67-162 .....	0.07	875.00 <sup>1</sup>
46	Junction of Highway 7 to Eldon Station (Various). Contract No. 67-529 .....	Nil	7,975.47 <sup>4</sup>
46	Lorneville Patrol Yard. Contract No. 67-529 .....	Nil	4,003.59 <sup>2</sup>
46	Secondary Highway 505 east to junction Highway 35. Contract No. 66-170 .....	6.20	22,488.92 <sup>1</sup>
46	Coboconk Patrol Yard. Contract No. 67-529 .....	Nil	3,999.76 <sup>2</sup>
49	Roblin Mills to Quinte Skyway Bridge. Contract No. 66-169 .....	3.89	106,531.26 <sup>1</sup>
115	Highway 28 westerly 7.5 miles. Contract No. 67-502 .....	7.50	18,865.83 <sup>3</sup>
401	Wilson Street, Oshawa, easterly 2.78 miles. Contract No. 67-31 .....	2.78	14,408.57 <sup>3</sup>
401	3.8 miles east of Oshawa easterly 7.0 miles. Contract No. 66-507 .....	7.00	18,349.11 <sup>3</sup>
401	Darlington-Clarke Boundary Patrol Yard. Contract No. 67-527 .....	Nil	5,000.00 <sup>2</sup>
401	Grafton Road Patrol Yard. Contract No. 67-531 .....	Nil	4,994.75 <sup>2</sup>
401	Junction of Highway 30 to junction of Highway 33. Contract No. 67-530 .....	9.70	9,996.97 <sup>4</sup>
503	9.3 miles north of Kirkfield. Contract No. 66-304 .....	Nil	12,388.22 <sup>2</sup>
505	6.7 miles north of junction Highway 46. Contract No. 66-304 .....	Nil	5,597.38 <sup>2</sup>
507	Highway 28 north 6.3 miles. Contract No. 66-240 .....	3.23	39,021.00 <sup>1</sup>
TOTALS .....		54.55	525,951.59

Granular "A"

5/8" Crushed Gravel "B" (Stockpile)

Granular "A" (Shoulders)

5/8" Crushed Gravel "B" (Shoulders)

5/8" Crushed Gravel "A" (Stockpiled)



## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
503	Pat. 12 junction Highway 503 and Highway 46 to junction Highway 503 and Highway 505 .....	16.38	5,345.8
503	Pat. 13 Project 66-34477 Uphill easterly .....	1.00	5,391.0
503	Pat. 13 junction Highway 503 and Highway 35 to junction Highway 503 and Highway 505 .....	6.19	310.5
503	Pat. 13 junction Highway 503 and Highway 121 to junction Highway 503 and Highway 35 .....	.50	
505	Pat. 12 Project 67-32159 from Victoria Road northerly .....	.70	1,095.0
505	Pat. 12 junction Highway 505 and Highway 46 to junction Highway 505 and Highway 503 .....	11.00	249.0
507	Pat. 7 junction 28-507-junction 36-507 .....	12.48	7.5
TOTALS .....		48.25	12,398.8

## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	MILES COMPL.
				PREVIOUS YEARS	THIS YEAR
2	C.N.R. and C.P.R. Overhead 2 miles east of Highway 45. Contract No. 66-151 .....	0.50	1966	0.25	0.25
2	Trent River Bridge, Town of Trenton. Contract No. 65-314 .....	1.00	1966	0.70	0.30
7TC	Intersection Improvement at Fowler's Corners junction 7 and 7B. Contract No. 67-34 .....	1.21	1967	Nil	1.21
7TC	Peterborough By-Pass easterly 7.04 miles and westerly 0.50 miles. Contract No. 67-17 .....	7.54	1967	Nil	4.57
7A	Bethany easterly to Highway 115. Contract No. 67-61 .....	5.79	1967	Nil	3.30
28	South Monaghan north 1.8 miles. Contract No. 66-186 .....	1.80	1966	1.10	0.70
28	Junction Highways 115 and 28 including 2 structures. Contract No. 66-60 .....	0.70	1966	0.41	0.29
28	0.4 miles south of Trent Canal Bridge in Young's Point northerly 1.0 miles. Contract No. 66-284 .....	1.00	1967	Nil	1.00
28	Junction Highways 28 and 36 including 2 structures at Burleigh Falls. Contract No. 66-215 .....	1.67	1966	0.18	1.49
30	Trent River and Trent Canal Bridge at Village of Trent River. Contract No. 67-15 .....	1.11	1967	Nil	0.05
45	Trent River and Headrace Bridges at Hastings. Contract No. 67-162 .....	0.17	1967	Nil	0.01
49	Village of Roblin Mills. Contract No. 66-169 ..	0.29	1967	Nil	0.29
507	Highway 28 north 6.3 miles. Contract No. 66-240 .....	6.30	1967	Nil	4.36
TOTALS .....		29.08		2.64	17.82

Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
				PREVIOUS YEARS		
2	C.N.R. and C.P.R. Overhead 2 miles east of Highway 45. Contract No. 66-151 .....	0.50	1966	0.31	0.19	25,092.93
2	Trent River Bridge, Town of Trenton. Contract No. 65-314 .....	1.00	1966	0.72	0.28	1,229.00
7TC	Intersection Improvement at Fowler's Corners junction 7 and 7B Contract No. 67-34 .....	1.21	1967	Nil	1.21	32,277.34
7TC	Peterborough By-Pass easterly 7.04 miles and westerly 0.50 miles. Contract No. 67-17 .....	7.54	1967	Nil	6.46	259,247.00
7A	Bethany easterly to Highway 115. Contract No. 67-61 .....	5.79	1967	Nil	4.66	137,450.50
28	South Monaghan northerly 1.8 miles.. Contract No. 66-186 .....	1.80	1966	1.44	0.36	8,518.59
28	Junction Highways 115 and 28 including 2 structures. Contract No. 66-60 .....	0.70	1966	0.57	0.13	6,999.21
28	0.4 miles south of Trent Canal Bridge in Young's Point northerly 1.0 miles. Contract No. 66-284 ..	1.00	1967	Nil	1.00	26,338.95
28	Junction Highways 28 and 36 including 2 structures at Burleigh Falls. Contract No. 66-215 .....	1.67	1967	Nil	1.67	22,960.01
45	Trent River and Head Race Bridges at Hastings. Contract No. 67-162	0.17	1967	Nil	0.12	1,019.00
46	Secondary Highway 505 east to Highway 35. Contract No. 66-170	9.40	1967	Nil	9.40	173.60
115	Highway 28 westerly 7.5 miles. Contract No. 67-502 .....	7.50	1967	Nil	7.50	3,447.83
401	3.8 miles east of Oshawa easterly 7.0 miles. Contract No. 66-507 .....	7.00	1967	Nil	7.00	6,719.50
507	Highway 28 north 6.3 miles. Contract No. 66-240 .....	6.30	1967	Nil	4.98	143,263.00
TOTALS .....		51.58		3.04	44.96	674,736.46

New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
46	1 mile west of Highway 35 (4 Bay) ..	Sheet Metal	Patrol Garage	1967	1968

Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	(gals.) 102	—	—
Calcium dust layer on gravel roads .....	—	31.95	—
Calcium for de-icing roads .....	Nil	—	—
Development roads built .....	Nil	—	—
Off-road parks maintained .....	15	—	—
Roads snowploughed and kept open. King's highways ..	15	—	678.1
Roads snowploughed and kept open, secondary highways ....	4	—	85.8
Roadside picnic places maintained .....	78	—	—

Routine maintenance, King's highways .....	15	—	678.1
Routine maintenance, secondary highways .....	4	—	85.8
Salt for de-icing roads (raw) .....	—	21,443.60	—
Salt in sand, stockpiled .....	—	5,080.71	—
Sand for winter maintenance .....	(cu. yds.) 58,850.20	—	—
Scale houses maintained .....	1	—	—
Seeding by department's forces .....	(acres) 113.9	—	—
Shrubs received and planted this year .....	Nil	—	—
Signs erected or replaced .....	10,889	—	—
Snow fence erected, dismantled, stored .....	—	—	92.3
Snow hedges planted this year .....	Nil	—	—
Traffic lights installed this year .....	Nil	—	—
Weed control .....	(gals.) 702	—	491
Zone painting on King's highways .....	(gals.) 15	9,689	678
Zone painting on secondary highways .....	(gals.) 4	621	58

**DISTRICT No. 8 — KINGSTON****E. A. Cash, P.Eng., District Engineer****CONSTRUCTION***Macdonald-Cartier Freeway — Highway 401*

The completion of the paving on the section from Gananoque to the junction of Highway 137 and the completion of the two structures over Highway 137 allowed this portion of Highway 401 to be opened September 1, 1967. This now leaves only sixteen miles of Highway 401 not opened to traffic. The last grading contract required to complete 401 made substantial progress. This, along with the completion of seven structures, enabled the Department to award the last two paving contracts required to complete Highway 401. During the winter, the contractor crushed and stockpiled part of his gravel requirements on these contracts. At five other locations, grade separation structures were completed and opened to traffic, eliminating at grade intersections.

*Highway 2*

Early in the spring of 1968, a contract for structure replacement, 1.9 miles west of Marysville, and grade revision, 2.5 miles west of Marysville, was awarded. Clearing was completed and a detour is being constructed to receive two double single Bailey Bridges. A shoulder widening and hot mix resurfacing contract has been completed between Shannonville and Marysville. This work corrected the narrow shoulder and broken pavement conditions.

*Highway 7 — Trans-Canada Highway*

Granular base and paving contract was completed and the Madoc By-Pass was opened to traffic on September 18th, 1967, thus relieving the congested traffic through the Village of Madoc.

*Highway 37*

From Moira River northerly 5.04 miles a granular base and hot mix paving contract, which started last fall, has been completed with the exception of some minor trimming. With the completion of this section of road, Highway 37 has now been reconstructed from Belleville to Tweed.

*Highway 38*

A major grading, drainage and granular base contract from Sharbot Lake to Tichborne was awarded late in the year, with the contractor commencing almost immediately and working throughout the winter months excavating rock. Its main purpose is to correct the poor vertical and horizontal alignment, thus alleviating the hazardous driving conditions to the Sharbot Lake tourist area and Highway 7. A clearing contract from Tichborne southerly 8.1 miles to Hinchinbrooke was completed readying another section for reconstruction.

*Highway 42*

A clearing contract between Athens and Delta was completed and a grading contract was awarded late in the fall of 1967. This work consists mainly of curve realignment and drainage revisions to which 25% of the grading is now complete.

*Highway 49*

The remainder of the concrete on the deck was placed, bridge lighting and



navigation lights were installed, and the Quinte High Level Structure was officially opened to traffic on September 6th, 1967.

## MAINTENANCE

The King's Highway system in the District was extended by the completion of Highway 401 from Gananoque to Highway 137 (1000 Isl. Bridge). It was opened to traffic for Labour Day. Highway 49 was extended and the Quinte Skyway Bridge was completed over the Bay of Quinte. The Madoc By-Pass was completed and opened to traffic.

An eight (8) bay patrol garage and office was constructed on a new site at the Junction of Highway 401 and Leeds County Road No. 3 to service the new section of Highway 401. It will also be the headquarters for the additional patrol (Patrol No. 25) which will provide maintenance for the remainder of Highway 401 to be opened this year. The Eldorado Patrol Yard was closed and the headquarters moved to a new four (4) bay patrol garage built at the existing Madoc Patrol site. A sand dome was constructed at the Marysville Patrol Yard to prevent salt contamination of adjacent properties.

The maintenance of the Service Centres at E5 and E6 was done this year under a tender agreement. The service provided by the supplier was satisfactory and allowed the patrol forces more time to continue with their normal duties. The picnic area at E6 Service Centre was expanded to accommodate the travelling public. The small park adjacent to the Erinsville Patrol Yard was transferred to the Department of Lands and Forests who now operate it.

The Glenora and Wolfe Island Ferries were operated continuously throughout the year. The Glenora system makes use of a bubbler system to prevent the formation of ice and the service to Wolfe Island was maintained by using an ice-breaking tug. A new steel adjustable ramp was fabricated and installed at the Crawford Dock, Kingston terminal of the Wolfe Island Ferry system. This adjustable ramp allows the crew of the ferry to adjust the ramp in a matter of minutes to meet the ever changing water level of Lake Ontario.

Winter Maintenance operations were carried out over the past winter season on 920 miles of King's Highway. The District, by using 4,000 tons of additional chemical, was able to show a saving of approximately 20,000 yards of sand. Two severe ice storms during January, 1968 accounted for most of the additional use of chemical. Some of the hydraulic spreaders were equipped with an automatic control device which maintained a constant application regardless of the speed the truck was driven. The winter maintenance schedule was revised so that fewer personnel were employed. The use of additional hired loaders also cut the seasonal winter staff.

Highway illumination was installed at the following locations: at the Junction of Highway 33 and Day's Road; Junction Highways 62 and 7 (Madoc By-Pass); Junction Highways 401 and 2, Interchange 107; Junction Highways 137 and 2.

Traffic lights were erected at the following locations: at the Junction Highway 33 and Day's Road; Junction Highways 137 and 2S.

Illuminated overhead signing was erected at the Junction of Highways 401 and 2S, Interchange 107 and the Junction of Highways 137 and 2S.

## Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
2	Marysville to Shannonville .....	4.50	1967	—	4.50	10,347 <sup>3</sup>
7TC & 62	Madoc By-Pass, Village of Madoc and Hamlet of Bannockburn .....	5.72	1967	—	5.72	12,827 <sup>3</sup>
37	Moir River northerly 5.04 miles, Vill- age of Plainfield and Latta Sideroad .....	2.75	1967	—	2.75	5,934 <sup>3</sup>
137 & 401	7.45 miles east of Highway 2, easterly, 1.95 miles .....	3.77	1965	3.64	0.13	1,936 <sup>1</sup>
401	Aikens Sideroad, 5.5 miles west of Highway 14 .....	0.34	1966	0.06	0.28	569 <sup>1</sup>
401	Interchange 105, Joyceville Road, 5.5 miles east of junction of Highway 15 .....	0.50	1966	—	0.50	7,793 <sup>2</sup>
401	1.2 miles west of junction Highway 2 (Gananoque) easterly 10.75 miles .....	12.75	1966	2.75	10.00	155,877 <sup>3</sup>
401	Sharpe's Lane, 2.7 miles east of High- way 29 .....	0.43	1966	—	0.43	868 <sup>1</sup>
401	Halleck's Road, 1.7 miles east of High- way 2 .....	0.20	1967	—	0.20	375 <sup>1</sup>
TOTALS .....		30.96		6.45	24.51	196,526

<sup>1</sup>Surface Course Only<sup>2</sup>Base Course Only<sup>3</sup>Base and Surface Course

## Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR TONS PLACED
401	Shanly Road, Cardinal to Highway 33, Trenton .....	159.31	148 <sup>1</sup>
2	Shanly Road, Cardinal to Trenton .....	112.10	302
7TC	Highway 38 to Marmora .....	34.58	6
14	Highway 401 to Marmora .....	26.43	135
15	Highway 2 to Smith's Falls .....	55.75	95
16	Johnstown to Becketts Landing .....	24.96	38
29	Brockville to Smith's Falls .....	28.93	35
32	Gananoque to Highway 15 .....	11.03	51
33	Kingston to Glenora Ferry Dock .....	29.99	40
33	Trenton to Sterling .....	14.45	35
37	Highway 401 to Highway 7 .....	27.07	88
38	Highway 2 to Highway 7 .....	43.93	46
41	Napanee to Highway 7 .....	31.65	400
42	Westport to Highway 29 .....	31.44	322
43	Smith's Falls to South Gower-Mountain Township Line .....	26.85	186
62	Highway 14 to Madoc-Tudor Township Line .....	30.51	14
95	Hornes Point to Highway 96 .....	7.19	26
96	Quebec Head to West End Concession 2 .....	19.90	95
137	New Highway 401 to International Boundary .....	1.35	14
SECONDARY HIGHWAYS			
509	Highway 7 to Snow Road .....	12.06	31
7051	Highway 96 to Dawsons Point .....	1.36	23
TOTALS .....		730.84	2,130

<sup>1</sup>Includes Interchange Leg Mileage

### Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	Various, Kingston to Gananoque .....	18	920
2	Various, Gananoque to Crystal Beach .....	25	779
2	Various, Cardinal to Brockville .....	20	653
2	Various, Deseronto to Napanee .....	5	198
2	Various, Belleville to Trenton .....	6	728
7TC	Various, junction Highway 38 to Arden .....	15	827
7TC	Various, Frontenac-Hastings County Line to Marmora .....	26	784
14	Various, Foxboro to Marmora .....	26	899
15	Various, Barriefield to junction Highway 32 .....	23	624
15	Various, Elgin to Smith's Falls .....	24	822
16	Various, Becketts Landing to Johnstown .....	24	759
29	Various, Brockville to Smith's Falls .....	30	319
32	Various, Seeley's Bay to Gananoque .....	11	703
33	Various, Millhaven to Glenora Ferry .....	18	606
33	Various, Trenton to Stirling .....	14	458
37	Various, Actinolite to Tweed .....	5	64
38	Various, Hartington to Tichborne .....	19	91
38	Various, Sharbot Lake to junction Highway 7 .....	2	284
43	Various, Smith's Falls to Grenville-Dundas County Line .....	28	815
62	Various, Madoc to Madoc-Tudor Township Line .....	12	179
401	Various, Gananoque to Crystal Beach .....	24	608
401	Various, Joyceville Sideroad to Gananoque .....	10	2,282
401	Various, Interchange 111 Crystal Beach to Interchange 117 Shanly Road .....	27	175
401	0.3 miles east of Lynn Overpass .....	—	9 <sup>1</sup>
401	Various, Interchange 88 to Cataraqui River Bridge .....	60	661
401	0.6 miles west of E-6 Service Centre .....	—	13 <sup>1</sup>
401	Junction Highways 401 and 41, Interchange 96 .....	—	7 <sup>1</sup>
TOTALS .....		472	15,267

<sup>1</sup>Dense Graded Thin Bituminous Hot Mix Remainder H.6.3

### Bituminous Surface Treatment

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS CHIPS USED
41	From Kaladar to Erinsville .....	14.0	41,283	2,053
42	From Delta easterly .....	5.0	9,462	436
96	Wolfe Island, Village easterly 16.0 miles .....	16.0	39,407	21,952 <sup>1</sup>
TOTALS .....		35.0	90,152	24,441

<sup>1</sup>5/8" crushed stone used rather than 3/8" chips

### Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE	
7TC	Deer Creek Structure .....	1965	1965	1967	Rigid frame	<sup>1</sup>
7TC	Madoc Creek Structure .....	1965	1965	1967	Rigid frame	<sup>2</sup>
49	Bay of Quinte High Level Bridge .....	1965	1967	1967	Continuous steel beam	<sup>3</sup>
401	Donovan Creek Bridge eastbound lane .....	1966	1967	—	Simply supported prestressed beam	<sup>4</sup>
401	Donovan Creek Bridge westbound lane .....	1966	1967	—	Simply supported prestressed beam	<sup>5</sup>

401	Ivy Lea Bridge Road Overpass east-bound lane .....	1966	1967	1967	Simply supported <sup>9</sup> post tensioned deck
401	Ivy Lea Bridge Road Overpass west-bound lane .....	1966	1967	1967	Simply supported <sup>7</sup> post tensioned deck
401	Aikens Sideroad Underpass .....	1966	1967	1967	Simply supported <sup>8</sup> prestressed beam
401	Joyceville Sideroad Underpass .....	1966	1967	1967	Simply supported <sup>9</sup> prestressed beam
401	Cliff Road Underpass .....	1966	1967	1967	Simply supported <sup>10</sup> prestressed beam
401	Mallorytown Road Underpass .....	1967	1967	—	Simply supported <sup>11</sup> post tensioned deck
401	Jones Creek, west branch .....	1967	1967	—	Barrel arch <sup>12</sup>
401	Jones Creek — east branch .....	1967	1967	—	Rigid frame <sup>13</sup> twin structure
401	Township Road Underpass .....	1967	1967	—	Simply supported <sup>14</sup> post tensioned deck
401	Westbound Connection Underpass ....	1967	1967	—	Simply supported <sup>15</sup> post tensioned deck
401	Sharpe's Lane Underpass .....	1967	1967	1967	Simply supported <sup>16</sup> prestressed beam
401	Halleck's Road Underpass .....	1967	1967	1967	Simply supported <sup>17</sup> prestressed beam
401	Lansdowne Road Underpass .....	1965	1966	1967	Simply supported <sup>18</sup> prestressed beam
401	Westbound Entrance at Gananoque ..	1964	1965	1967	Simply supported <sup>19</sup> prestressed beam

<sup>1</sup>Length 37 feet 6 inches, width 40 feet, spans — 1 at 34 feet, clearance n/a, site number 11-248

<sup>2</sup>Length 27 feet 6 inches, width 24 feet, spans — 1 at 27 feet 6 inches, clearance n/a, site number 11-249

<sup>3</sup>Length 2,780 feet, width 30 feet, 17 spans — 2 at 140 feet, 6 at 150 feet, 6 at 165 feet, 2 at 180 feet, 1 at 250 feet, clearance 90 feet, site number 12-245

<sup>4</sup>Length 97 feet 2 inches, width 35 feet, 3 spans — 2 at 31 feet 5 inches, 1 at 32 feet 2 inches, clearance n/a, site number 16-152

<sup>5</sup>Length 97 feet 2 inches, width 35 feet, 3 spans — 2 at 31 feet 5 inches, 1 at 32 feet 2 inches, clearance n/a, site number 16-152

<sup>6</sup>Length 184 feet 1 inch, width 35 feet, 2 spans — 2 at 90 feet, clearance 15 feet 11½ inches, site number 16-164

<sup>7</sup>Length 184 feet 2 inches, width 33 feet, 2 spans — 2 at 90 feet, clearance 15 feet 4 inches, site number 16-164

<sup>8</sup>Length 195 feet 6 inches, width 28 feet, 4 spans — 2 at 35 feet, 2 at 61 feet 9 inches, clearance 15 feet 4 inches, site number 12-156

<sup>9</sup>Length 220 feet 6 inches, width 30 feet 6 inches, 4 spans — 2 at 41 feet, 1 at 72 feet 6 inches, 1 at 64 feet 6 inches, clearance 17 feet, site number 7-73

<sup>10</sup>Length 242 feet 2 inches, width 28 feet, 4 spans — 2 at 40 feet, 2 at 80 feet, clearance 16 feet 1 inch, site number 16-157

<sup>11</sup>Length 295 feet 8 inches, width 28 feet, 4 spans — 2 at 47 feet, 2 at 94 feet, site number 16-162

<sup>12</sup>Length n/a, width n/a, 1 span — 1 at 24 feet, clearance n/a, site number 16-167

<sup>13</sup>Length n/a, width n/a, 2 spans — 2 at 20 feet, clearance n/a, site number 16-168

<sup>14</sup>Length 236 feet 10 inches, width 28 feet, 4 spans — 2 at 40 feet, 2 at 76 feet 6 inches, site number 16-177

<sup>15</sup>Length 269 feet, width 32 feet, 3 spans — 2 at 80 feet, 1 at 105 feet, site number 16-178

<sup>16</sup>Length 205 feet 7 inches, width 28 feet, 4 spans — 2 at 38 feet, 2 at 64 feet, clearance 15 feet 3 inches, site number 16-125

<sup>17</sup>Length 199 feet 8 inches, width 28 feet, 4 spans — 2 at 33 feet, 2 at 65 feet, clearance 15 feet 3 inches, site number 16-116

<sup>18</sup>Length 247 feet, width 28 feet, 4 spans — 2 at 40 feet, 2 at 83 feet 6 inches, clearance 15 feet 3 inches, site number 16-155

<sup>19</sup>Length 179 feet 9 inches, width 35 feet, 3 spans — 2 at 45 feet, 1 at 86 feet 6 inches, clearance 15 feet 3 inches, site number 17-159





Hwy. 49 — Aerial view of Quinte Skyway. Photo 9623D—(Kingston)

### Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
2	Shannonville to Marysville .....	4.94	28,691
7TC	Madoc By-Pass, Village of Madoc and Hamlet of Bannockburn & 62 on Highway 62 .....	5.72	68,109
7TC	D.H.O. Patrol Yard, junction of Highways 7TC and 509 .....	—	7,995 <sup>1</sup>
37	Moirs River northerly 5.04 miles, Village of Plainfield, Latta Sideroad .....	6.46	70,162
41 & 42	D.H.O. Patrol Yards at Crosby and Erinsville .....	—	14,998 <sup>1</sup>
42	Athens West Limits westerly 5.8 miles .....	—	6,535 <sup>2</sup>
43	D.H.O. Patrol Yard, Merrickville .....	—	7,986 <sup>1</sup>
49	Bay of Quinte at Cronk's Ferry .....	—	1,538
137 &	From 7.45 miles east of Highway 2 (Gananoque) easterly for 1.95 401 miles and Highway 137 .....	0.13	56
401	Aikens Sideroad, 5.5 miles west of Highway 14 .....	0.14	1,593
401	Interchange 105, Joyceville Road, 5.5 miles east of Highway 15 .....	0.49	8,912
401	From 1.2 miles west of Highway 2 (Gananoque) easterly 10.75 miles .....	3.65	149,773
401	From 15.78 miles east of junction Highway 2 (Gananoque) easterly 8.45 miles .....	5.75	66,680
401	Halleck's Road, 1.7 miles east of Highway 2 (Brockville) .....	0.33	17,343
401	Sharpe's Lane, 2.7 miles east of Highway 29 .....	0.43	4,339
TOTALS .....		28.04	454,710

<sup>1</sup>Stockpiled

<sup>2</sup>Culvert Backfill and Detours

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
401	Shanly Road, Cardinal to Highway 33, Trenton .....	159.31	6,437
2	Shanly Road, Cardinal to Trenton .....	91.37	9,617
2S	Highway 137 to Highway 2 .....	11.02	624
7TC	Highway 38 to Marmora .....	59.96	4,122
14	Highway 401 to Marmora .....	26.43	925
15	Highway 2 to Smiths Falls .....	55.75	2,777
16	Johnstown to Becketts Landing .....	24.96	1,013
29	Brockville to Smiths Falls .....	28.93	1,526
32	Gananoque to Highway 15 .....	11.03	1,581
33	Kingston to Glenora Ferry Dock .....	29.99	135
33	Trenton to Stirling .....	14.45	290
37	Highway 401 to Highway 7 .....	27.07	55
38	Highway 2 to Highway 7 .....	43.93	282
41	Napanee to Highway 7 .....	31.65	1,620
42	Westport to Highway 29 .....	31.44	24
43	Smiths Falls to South Gower-Mountain Township Line .....	28.85	1,419
62	Highway 14 to Madoc-Tudor Township Line .....	30.51	895
95	Hornes Point to Highway 96 .....	7.19	196
96	Quebec Head to West End Concession 2 .....	19.90	853
137	New Highway 401 to International Boundary .....	1.35	81
SECONDARY HIGHWAYS			
509	Highway 7 to Snow Road .....	12.06	177
7051	Highway 96 to Dawson Point .....	1.36	196
TOTALS .....		748.51	34,845

<sup>1</sup>Includes Interchange Leg Mileage

## Grading and Culverts

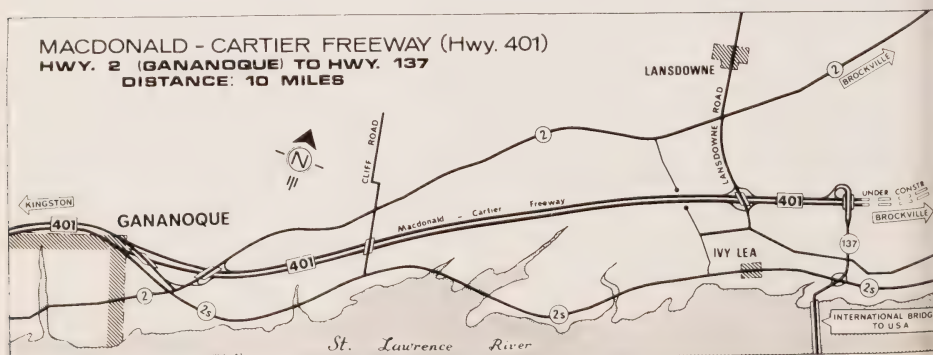
Hwy. No.	LOCATION	MILES		YEAR BEGUN	MILES COMPL.	MILES COMPL.
		IN JOB			PREVIOUS YEARS	THIS YEAR
2	1.9 miles and 2.5 miles west of Marysville .....	0.99		1968	—	0.01
37	Moirs River northerly 5.4 miles .....	6.46		1967	—	6.46
38	Sharbot Lake South Limits to Tichborne .....	7.36		1967	—	1.47
42	Athens West Limits westerly 5.8 miles .....	5.80		1967	—	1.51
401	Service Centre E-7, 1.1 miles east of Mallory- town Road .....	0.58		1968	—	0.38
401	Service Centre E-8, 2.8 miles east of Mallory- town Road .....	0.55		1968	—	0.36
401 & 137	From 7.45 miles east of Highway 2 (Gana- noque) easterly 1.95 miles and Highway 137 .....	5.28		1965	5.25	0.03
401	Interchange 105, Joyceville Road, 5.5 miles east of Highway 15 .....	0.50		1966	—	0.50
401	From 15.78 miles east of Highway 2 (Gana- noque) easterly 8.47 miles .....	8.47		1966	—	7.71
401	Halleck's Road (Brockville), 1.7 miles east of Highway 2 .....	0.33		1967	—	0.33
TOTALS .....		36.32			5.25	18.76

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES	YEAR BEGUN	MILES	THIS FISCAL YEAR	TONS
		IN JOB		COMPL. PREVIOUS YEARS		
2	Shannonville to Marysville .....	4.94	1967	Nil	4.94	63,191
7TC	Madoc By-Pass from 1.6 miles west of Madoc easterly 3.52 miles .....	3.52	1966	0.52	3.00	117,251
37	Moirra River northerly 5.04 miles ....	6.46	1967	Nil	6.33	196,183
42	Athens West Limits westerly 5.8 miles .....	5.80	1967	Nil	2.09	6,535
49	Bay of Quinte at Cronk's Ferry .....	1.15	1965	0.38	0.77	1,538
137 & 401	From 7.45 miles east of Highway 2 (Gananoque) easterly 1.95 miles and Highway 137 .....	5.28	1965	5.25	0.03	845
401	Aikens Sideroad, 5.5 miles west of Highway 14 .....	0.38	1966	0.20	0.18	3,490
401	Joyceville Sideroad, 5.5 miles east of Highway 15 .....	0.50	1966	Nil	0.49	45,018
401	From 1.2 miles west of Highway 2 (Gananoque) easterly 10.75 miles .....	10.75	1964	7.10	3.65	221,135
401	From 15.78 miles east of Highway 2 (Gananoque) easterly 8.47 miles .....	8.47	1966	Nil	5.76	161,430
401	Sharpe's Lane, 2.7 miles east of Highway 29 .....	0.43	1966	Nil	0.43	8,273
401	Halleck's Road, 1.7 miles east of Highway 2 (Brockville) .....	0.33	1967	Nil	0.29	9,344
TOTALS .....		48.01		13.45	27.96	834,233

## New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
401	Lansdowne Patrol Yard .....	Garage and office	Patrol	1966	1967
401	Lansdowne Patrol Yard .....	Shed	Salt	1967	1967
2S	Landon's Bay Park .....	Toilet	Toilet	1967	1967
7TC	Madoc Patrol Yard .....	Garage and office	Patrol	1967	1967
502	Marysville Patrol Yard .....	Shed	Sand	1967	1967

<sup>1</sup> 1 corrugated metal building — 8 bay<sup>2</sup> 2 frame buildings<sup>3</sup> 2 frame buildings<sup>1</sup> 1 corrugated metal building — 4 bay<sup>5</sup> 1 frame dome building



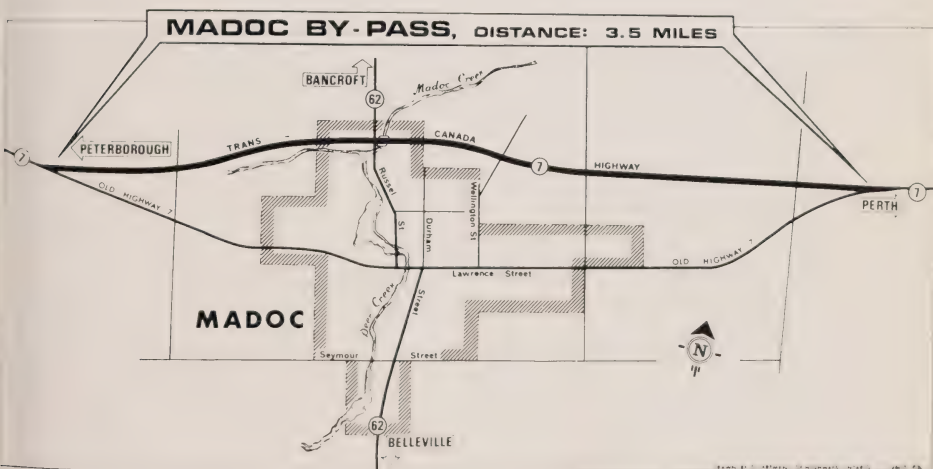
## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	11 <sup>1</sup>	—	—
Calcium dust layer on gravel roads .....	—	—	—
Calcium for de-icing roads .....	—	—	—
Development roads built .....	—	—	—
Off-road parks maintained .....	15	—	—
Roads snowploughed and kept open, King's highways .....	—	—	901.34
Roads snowploughed and kept open, secondary highways .....	—	—	20.01
Roadside picnic places maintained .....	73	—	—
Routine maintenance, King's highways .....	—	—	901.34
Routine maintenance, secondary highways .....	—	—	20.01
Salt for de-icing roads (raw) .....	—	18,815	—
Salt in sand, stockpiled .....	—	3,245	—
Sand for winter maintenance .....	—	49,703	—
Scale houses maintained .....	3	—	—
Seeding by department's forces .....	(acres) 219	—	—
Shrubs received and planted this year .....	11,242 <sup>2</sup>	—	—
Signs erected or replaced .....	3,801	—	—
Snow fence erected, dismantled, stored .....	—	—	21.29
Snow hedges planted this year .....	—	—	—
Traffic lights installed this year .....	5	—	—
Weed control .....	1,534 <sup>3</sup>	—	1,165
Zone painting on King's highways .....	(gals.) 14,565	—	1,173.10
Zone painting on secondary highways .....	(gals.) 88	—	7.8

<sup>1</sup>10 Structures — Handrails only. 1 Structure — Complete

<sup>2</sup>Trees and Shrubs

<sup>3</sup>Gallons Weed Killer





WOLFE ISLANDER						UPPER CANADA						TOTAL FOR BOTH FERRIES
MONTHS	DAYS WORKED	TRIPS	CARS	TRUCKS	TOTAL	MONTHS	DAYS WORKED	TRIPS	CARS	TRUCKS	TOTAL	
April	30	471	7,626	463	8,089	April	19	222	3,020	75	3,095	11,184
May	28	426	7,198	385	7,583	May	30	363	6,166	162	6,328	13,911
June	30	481	9,048	443	9,491	June	30	350	6,271	161	6,432	15,923
July	31	500	11,321	403	11,724	July	31	361	7,189	118	7,307	19,031
August	31	497	11,607	462	12,069	August	31	367	7,262	149	7,411	19,480
September	30	481	9,053	602	9,655	September	30	350	5,977	157	6,134	15,789
October	31	496	8,373	570	8,943	October	31	363	6,238	153	6,391	15,334
November	30	476	6,845	594	7,439	November	30	345	5,384	148	5,532	12,971
December	31	496	9,030	530	9,560	December	8	77	979	10	989	10,549
January	31	496	7,698	482	8,180	January	4	41	411	12	423	8,603
February	29	463	7,688	400	8,088	February	—	—	—	—	—	8,088
March	31	492	9,070	443	9,513	March	—	—	—	—	—	9,513
TOTALS	363	5,775	104,557	5,777	110,334	TOTALS	244	2,839	48,897	1,145	50,042	160,376

## WOLFE ISLANDER

Peak traffic: August 7, 1967

Trips	16
Cars	423
Trucks	2

Total days worked	363
Total trips	5,775
Total cars carried	104,557
Total trucks carried	5,777

## UPPER CANADA

Peak traffic: July 3, 1967

Trips	12
Cars	272
Trucks	4

Total days worked	244
Total trips	2,839
Total cars carried	48,897
Total trucks carried	1,145

QUINTE					QUINTE LOYALIST							TOTAL FOR BOTH FERRIES
MONTHS	DAYS WORKED	TRIPS	CARS	TRUCKS	TOTAL	MONTHS	DAYS WORKED	TRIPS	CARS	TRUCKS	TOTAL	
April	20	456	4,536	193	4,729	April	30	1,285	13,146	1,033	14,179	18,908
May	20	834	7,931	382	8,313	May	29	1,070	13,118	933	14,111	22,424
June	30	1,341	14,034	490	14,524	June	30	1,010	13,316	1,037	14,353	28,877
July	31	1,523	21,405	422	21,827	July	31	1,100	20,806	947	21,753	43,580
August	31	1,478	19,793	471	20,264	August	31	1,083	19,587	1,090	20,677	40,941
September	30	1,310	11,283	302	11,585	September	30	977	10,353	528	10,881	22,466
October	31	1,314	9,844	317	10,161	October	28	852	7,369	325	7,694	17,855
November	30	1,199	6,332	218	6,550	November	30	930	5,250	356	5,606	12,156
December	31	1,239	6,316	236	6,552	December	30	875	4,630	308	4,938	11,490
January	11	360	1,219	44	1,263	January	31	1,136	6,232	379	6,611	7,874
February	—	—	—	—	—	February	29	1,178	8,358	419	8,777	8,777
March	—	—	—	—	—	March	31	1,266	10,939	463	11,402	11,402
TOTALS	265	11,054	102,693	3,075	105,768	TOTALS	360	12,762	133,104	7,878	140,982	246,750

QUINTE

Peak traffic: July 16, 1967  
               Trips  
               Cars  
               Trucks

Total days worked  
 Total trips  
 Total cars carried  
 Total trucks carried

59  
 930  
 6  
 265  
 11,054  
 102,693  
 3,075

QUINTE LOYALIST

Peak traffic: July 9, 1967  
               Trips  
               Cars  
               Trucks

Total days worked  
 Total trips  
 Total cars carried  
 Total trucks carried

43  
 949  
 10  
 360  
 12,762  
 133,104  
 7,878

**DISTRICT No. 9 — OTTAWA****C. R. Robertson, P.Eng., District Engineer****CONSTRUCTION***Highway 401*

The concrete paving of the westbound lanes from Iroquois to Aultsville Road was completed. This completed the paving of Highway 401 in the Ottawa District. Two service centres were completed on Highway 401 between Morrisburg and the Aultsville Road. Approach fills were constructed for a future underpass at Nine Mile Road west of Cornwall. At the Fraser Road west of Lancaster, construction of approach fills and an overpass was started and will be completed early in the 1968 construction season.

*Highway 2*

A contract for the channelization of the Moulinette Road and easterly entrance to the Long Sault parkway, the channelization of the Avonmore road, repairs to Hoople Creek, and improvement of the Long Sault patrol yard was awarded for completion next construction season.

*Highway 31*

A culvert was replaced on the Reuben Mattice drain one mile north of Highway 401, to facilitate the deepening of this municipal drain. Two structures over Hess Creek 2.5 and 3.2 miles north of Williamsburg were completed. The approaches to these structures with minor re-alignment were constructed with some hot mix paving and the trimming remaining to be done next season.

*Highway 138*

The clearing of the right of way from St. Andrew's to Monkland was completed by day labour forces during the winter months.

*Highway 16*

Major grading operations were carried out from the end of the Manotick by-pass to two miles south of North Gower. The hot mix paving of this section was started and will be completed during the summer of 1968. In the Police Village of North Gower new storm sewers, curb and gutters, sidewalks, and street lighting were installed under this project.

*Highway 43*

A contract for the grading, cement stabilized granular base and hot mix paving was awarded for the section from Highway 31, 7.2 miles westerly. This contract should be completed by the end of next construction season.

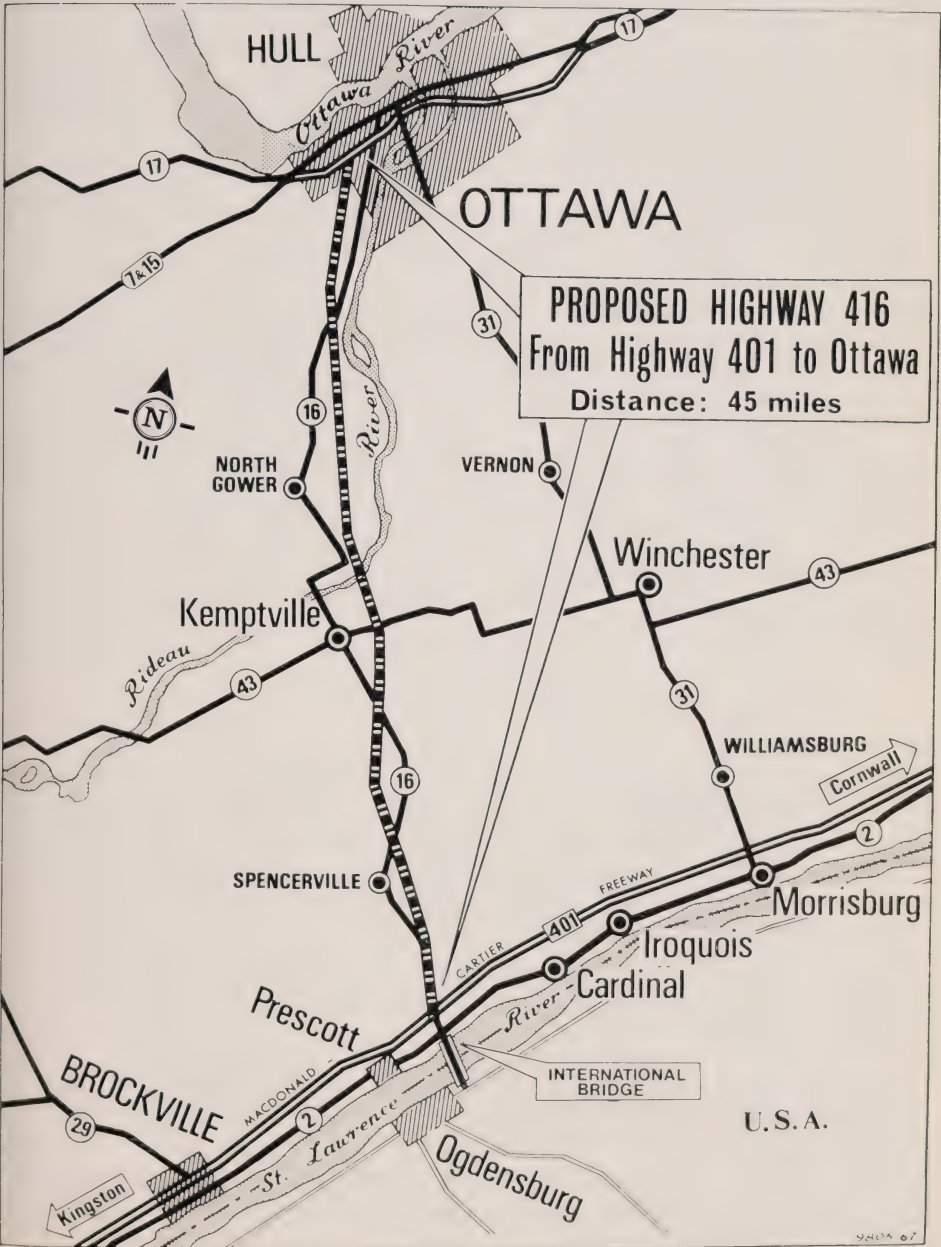
*TCH 17E*

The channelization and illumination of the westerly entrance to Rockland as well as the replacement of a culvert on old Highway 17 over the Lafontaine Creek was carried out. An interchange at the Blair Road on the Ottawa Queensway 2 miles east of the City limits was constructed and opened to traffic January 17th, 1968. Extensive construction was done for the Eastview Suburban Roads Commission and the Ottawa Suburban Roads Commission under this project. This included the reconstruction of the Blair Road and the reconstruction of a portion of Ogilvie Road from Blair Road easterly to Appleford Street a distance of  $\frac{3}{5}$  of a mile. A

portion of the curb and gutter and some illumination plus the trimming remains to be completed next season.

*Ottawa Queensway*

4.26 miles of chain link median barrier was erected in the fall of 1967. Wet ground conditions caused a delay in completion of topsoiling and sodding in the trim operation. This work will be completed in the spring of 1968.





*Highway 653 Approaches to the Portage Du Fort Bridge*

The Department entered into a cost sharing agreement with the Federal Government and the Province of Quebec in the construction of a new bridge and improvement of the structure approaches. The structure was opened to traffic in October 1967. Trim work will be completed by the early summer of 1968.

*Highway 29 Carleton Place to Almonte*

Grading, drainage in Town of Almonte and resurfacing from Carleton Place to Almonte was completed in early summer of 1967.

*Highway 7 and 15 Bells Corners*

Grading, drainage, sewers, H.M.P. and structure. This contract was completed in early summer of 1967.

*Highway 60 Douglas to Highway 17*

Hot Mix paving of this portion of roadway (which had been reconstructed to granular grade in 1966) was carried out in 1967.

*Highway 417 Richmond Road Interchange*

Grading, drainage, H.M.P., concrete pavement and structure. The majority of work was completed in 1967. A steel strike delayed completion of structural steel on the structure. The contract will be completed by July 1968.

*Highway 417 Structures at Acres Road, Moodie Drive and C.N.R. overpass*

Work on these three structures commenced in October 1967, and continued through the winter. Work should be completed by September 1968.

*Highway 17 Moodie Drive to Kennedy's Corner*

Grading, drainage, hot mix paving commenced in June 1967. Work was completed in August 1967.

## MAINTENANCE

Maintenance of the Ottawa Queensway was assumed from the City at the first of the fiscal year. This required the organization of one additional patrol crew and several additional pieces of equipment. A chain-link type-median barrier fence was installed on 4½ miles of the Queensway for traffic protection purposes. Cross-over type accidents on this section have been eliminated as a result of the fence. The fence itself has required almost continuous repair.

Patrol Yard development included the construction of new metal garages near Orleans, Avonmore and Almonte as well as the construction of salt storage buildings at Orleans, Iroquois and Alexandria.

The north lanes of Highway 401 between Iroquois and the Aultsville Road were opened to traffic in August. This meant that all of Highway 401 within the Ottawa District was completed to the four lane divided standard.

Traffic on the main highways in the District was exceptionally heavy throughout the summer due to Expo 67. Winter weather was slightly milder than usual, with a below average depth of snowfall.

Major bridge repairs were completed at the Madawaska River bridge on Highway 17, the Raisin River bridge on Highway 2, and underwater foundation repairs were made to the Rideau River bridge on Highway 16.

### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES	THIS FISCAL YEAR	TONS PLACED
				COMPL. PREV. YRS.	MILEAGE COMPL.	
7 & 15	1.5 miles west of Ottawa City Limits					
	westerly 2.22 miles .....	2.22	1965	1.70	0.52	6,529
7, 15 & 17TC	Interchange at Highways 7, 15 and 17	1.61	1966	Nil	1.61	17,854
16	From 1.0 miles south of North Gower northerly to south limit of the Manotick Diversion .....	4.34	1966	Nil	4.34	7,430 <sup>1</sup>
17TC	Channelization at west limits of Rockland .....	0.65	1966	Nil	0.65	2,006
17	From west limits of Arn prior to the intersection of Highway 17 with the Township Road to Burnstown .....	7.70	1967	Nil	7.70	3,924
17	Blair Road Interchange .....	2.20	1967	Nil	2.20	14,266
29	From Carleton Place to Almonte .....	5.99	1966	Nil	5.99	17,056
31	Reuben Mattice Drain 0.9 miles north of junction of Macdonald Cartier Freeway .....	0.16	1966	Nil	0.16	271
31	North and South Branches of Hess Creek 3.2 miles and 2.5 miles north of Williamsburg .....	0.80	1966	Nil	0.80	3,190
43	Approximately 1 mile east of the junc- tion of Highways 43 and 31 .....	0.10	1966	Nil	0.10	22
60	From Highway 17 westerly 7.76 miles	7.76	1966	Nil	7.76	22,766
401	Iroquois easterly 16.18 miles .....	16.18	1965	Nil	16.18	3,759
417	Acres Road Underpass .....	1.70	1967	Nil	1.70	265
TOTALS .....		51.41		1.70	49.71	99,338

### Bituminous Prime on Gravel Roads

HWY. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
17	Chute-A-Blondeau to Highway 17TC	1.7	6,435	195
508	Burnstown to Hydro Access Road	14.3	45,184	1,208
TOTALS		16.0	51,619	1,403

### Bituminous Resurfacing of Old Pavement

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS SAND USED
17	From 2.5 miles west of Ottawa west limits to County Road 20	6.01	11,963
34 & 43	Various locations	12.10	4,987
TOTALS		18.11	16,950

### Bituminous Surface Treatment

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS CHIPS USED
653	Haley's Station to Quebec Border .....	5.50	17,808	810
	TOTALS .....	5.50	17,808	810

### Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
2	Grays Creek Bridge at East limits of Cornwall .....	1966	1967	1967	Prestressed concrete and structural steel
16	Stevens Creek Bridge .....	1966	1967	1967	Concrete on steel piles
16	Taylor Municipal Drain Bridge .....	1966	1967	1967	Concrete on steel piles
17	Blair Road Interchange Underpass ..	1967	1967	1967	Prestressed cast in place deck
31	Bridge at North Branch of Hess Creek .....	1966	1967	1967	Prestressed cast in place deck
31	Bridge at South Branch of Hess Creek .....	1966	1967	1967	Prestressed cast in place deck
401	Crysler Memorial Park Road Under- pass .....	1965	1967	1967	Prestressed cast in place deck
401	Fraser Road Underpass .....	1967	—	—	Reinforced concrete deck on prestressed beams
417	Acres Road Underpass .....	1967	—	—	Reinforced concrete
417	Moodie Drive Underpass .....	1967	—	—	Reinforced concrete
417	Canadian National Railway Overpass	1967	—	—	Reinforced concrete
653	Portage Du Fort Bridge .....	1966	1967	1967	Structural steel and reinforced concrete

### Concrete Base Pavement, Asphalt Top

HWY. NO.	LOCATION	MILES	YEAR BEGUN	THIS FISCAL YEAR	
		IN JOB		MILES COMPL.	TONS PLACED
7, 15 & 17TC	Interchange at Highways 7, 15 and 17 .....	1.78	1966	1.78	1,592
17	Blair Road Interchange .....	2.76	1967	2.76	694
401	Iroquois easterly 16.18 miles .....	16.18	1965	16.18	14,343
TOTALS .....		20.72		20.72	16,629

## Concrete Pavement

Hwy. No	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	SQ. YDS. PLACED
7, 15 & 17TC	Interchange at Highways 7, 15 and 17 .....	1.78	1966	Nil	1.78	8,517
17	Blair Road Interchange .....	2.76	1967	Nil	2.76	5,566
401	Iroquois easterly 16.18 miles .....	16.18	1966	8.09	8.09	42,752
	TOTALS .....	20.72		8.09	12.63	56,835

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
7 & 15 7, 15, 17TC	1.5 miles west of Ottawa City Limits westerly 2.22 miles .....	0.25	3,669
16	Interchange at Highways 15, 7 and 17 .....	1.69	35,839
	From 1.0 miles south of North Gower northerly to south limit of the Manotick Diversion .....	4.33	67,374
17	Channelization at west limits of Rockland .....	0.65	3,771
17	Blair Road Interchange .....	2.51	56,867
17	From the west limits of Arnprior to the intersection of Highway 17 with the Township Road to Burnstown .....	7.70	4,989
29	Carleton Place to Almonte .....	5.99	15,010
31	Reuben Mattice Drain 0.9 miles north of junction of MacDonald- Cartier Freeway .....	0.16	1,554
31	North and south branches of Hess Creek 3.2 miles and 2.5 miles north of Williamsburg .....	0.88	16,491
60	From Highway 17 westerly 7.76 miles .....	7.76	11,945
401	Iroquois easterly 16.18 miles .....	8.10	70,408
401	Fraser Road Underpass 2.8 miles west of junction of Highways 2 and 34 (Grading) .....	0.36	3,420
401	Underpass at Fraser Road 2.8 miles west of junction of Highways 2 and 34 (Structure) .....	0.20	4,557
417	Acres Road Underpass .....	1.61	2,171
417	0.8 miles north of Highways 7 and 15 on Acres Road and 0.39 miles south of Corkstown Road on Moodie Drive .....	0.87	2,987
TOTALS .....		43.06	301,052

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS. PLACED
2	Quebec Border to Cardinal (Shoulder) .....	60	1,476
7	Ottawa to junction Highway 38 (Shoulder) .....	67	4,157
15	Carleton Place to Smith's Falls (Shoulder) .....	17	662
16	Ottawa to Beckett's Landing (Shoulder) .....	26	852
17	Ottawa to Petawawa Township Line (Shoulder) .....	205	8,901
29	Arnprior to Carleton Place (Shoulder) .....	26	495
31	Ottawa to Morrisburg (Shoulder) .....	44	623
34	Hawkesbury to Lancaster (Shoulder) .....	34	2,718
41	Pembroke to Eganville (Shoulder) .....	24	1,652
43	Alexandria to Hallville (Shoulder) .....	50	327

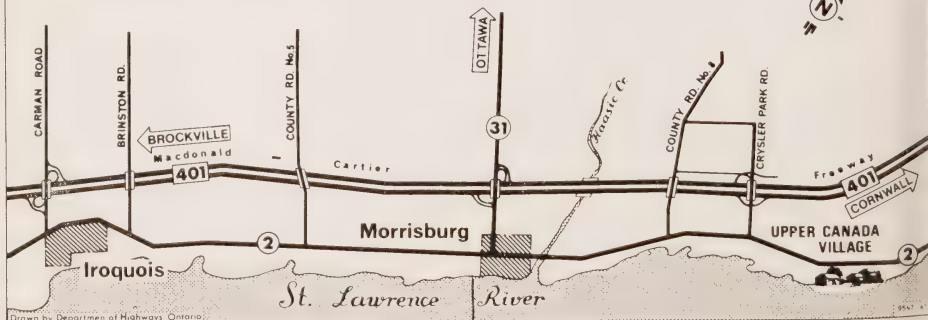


43	Smiths Falls to Perth (Shoulder) .....	11	516
60	Highway 17 to Killaloe Station (Shoulder) .....	36	3,435
62	Pembroke to Fraser Richards Line (Shoulder) .....	19	600
138	Cornwall to Monkland (Shoulder) .....	11	638
508	Burnstown to Black Donald (Surface) .....	24	4,085
511	Brightside to Calabogie (Surface) .....	20	1,368
653	Haleys Station to Quebec Border (Surface) .....	6	450
401	Quebec Border to Cardinal (Shoulder) .....	60	1,155
TOTALS .....		740	34,110

## Grading and Culverts

			MILES	MILES	MILES	
			IN	YEAR	COMPL.	
Hwy.	LOCATION		JOB	BEGUN	PREVIOUS	
No.				YEARS	THIS	
				YEAR	YEAR	
7 & 15	At Carsbrooke Road .....		0.21	1967	Nil	0.21
7, 15 & 17TC	Interchange at Highways 7, 15 and 17 .....		1.78	1966	Nil	1.78
16	From 1.0 miles south of North Gower nor- therly to south limit of the Manotick Diversion .....		5.78	1966	Nil	5.00
17	Channelization at west limits of Rockland .....		0.65	1966	Nil	0.65
17	Blair Road Interchange .....		2.76	1967	Nil	2.20
31	Reuben Mattice Drain 0.9 miles north of junc- tion of Macdonald-Cartier Freeway .....		0.16	1966	Nil	0.16
31	North and South Branches of Hess Creek 3.2 miles and 2.5 miles north of Williamsburg ..		0.88	1966	Nil	0.88
401	Fraser Road Underpass 2.8 miles west of junc- tion of Highways 2 and 34 (Grading) .....		0.71	1966	0.41	0.30
401	Fraser Road Underpass 2.8 miles west of junc- tion of Highways 2 and 34 (Structure) .....		0.60	1967	Nil	0.30
401	Nine Mile Road Underpass Interchange .....		0.20	1967	Nil	0.70
417	Acres Road Underpass .....		1.70	1967	Nil	0.34
417	0.8 miles north of Highway 7 and 15 on Acres Road and 0.39 miles south of Corkstown Road on Moodie Drive .....		0.87	1967	Nil	0.87
TOTALS .....			16.30		0.41	13.39

Additional lanes (westbound) being opened  
on Macdonald-Cartier Freeway (Hwy 401)  
Iroquois easterly to 8.7 miles east of Morrisburg  
Distance: 16 miles



## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
7 & 15	At Carsbrooke Road .....	0.21	1967	Nil	0.21	1,639
7, 15 & 17TC	Interchange at Highways, 7, 15 and 17 .....	1.78	1967	Nil	1.24	22,507
16	From 1.0 miles south of North Gower northerly to south limit of the Manotick Diversion .....	5.78	1967	Nil	4.68	130,206
17	From 2.5 miles west of Ottawa West limits to County Road 20 .....	6.01	1967	Nil	6.01	7,298
17TC	Channelization at west limits of Rockland .....	0.65	1967	Nil	0.65	6,869
17	Blair Road Interchange .....	2.76	1967	Nil	2.76	81,914
31	North and south branches of Hess Creek 3.2 miles and 2.5 miles north of Williamsburg .....	0.88	1967	Nil	0.88	15,633
401	Iroquois easterly 16.18 miles .....	16.18	1965	11.81	4.37	73,744
417	Acres Road Underpass .....	1.70	1967	Nil	0.48	1,045
TOTALS .....		35.95		11.81	21.28	340,855

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
		Metal concrete			
17TC	Navan Road Patrol Yard, 184 feet x 40 feet .....	block foundation	Patrol Garage — 10 bays	1967	1967
29	Almonte Patrol Yard, 88 feet x 40 feet .....	Metal concrete block foundation	Patrol Garage — 5 bays	1967	1967
17TC	Navan Road Patrol Yard, 28 feet x 44 feet .....	Frame concrete foundation	Salt Storage	1967	1967
401	Iroquois Patrol Yard, 28 feet x 44 feet .....	Frame concrete foundation	Salt Storage	1967	1967
508	Calabogie Patrol Yard, 12 feet x 20 feet .....	Frame Concrete block concrete foundation	Tool Storage	1967	1967
401	Service Centre E-9, 7 feet 4 inches x 21 feet 8 inches .....	Concrete block concrete foundation	Toilet Building	1967	1967
401	Service Centre E-11, 7 feet 4 inches x 21 feet 8 inches .....	Concrete block concrete foundation	Toilet Building	1967	1957

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	4	—	—
Calcium dust layer on gravel roads .....	—	100	—
Calcium for de-icing roads .....	—	—	—
Development roads built .....	12	—	53
Off-road parks maintained .....	14	—	—
Roads snowploughed and kept open, King's highways .....	—	—	856
Roads snowploughed and kept open, secondary highways .....	—	—	52
Roadside picnic places maintained .....	65	—	—
Routine maintenance, King's highways .....	—	—	856

Routine maintenance, secondary highways .....	—	—	52
Salt for de-icing roads (raw) .....	—	24,394	—
Salt in sand, stockpiled .....	—	630	—
Sand for winter maintenance .....	—	12,540	—
Scale houses maintained .....	4	—	—
Seeding by department's forces .....	(acres) 186	—	—
Shrubs received and planted this year .....	2,243	—	—
Signs erected or replaced .....	10,013	—	—
Snow fence erected, dismantled, stored .....	—	—	26
Snow hedges, planted this year .....	—	—	—
Traffic lights installed this yeyar .....	4	—	—
Weed control .....	—	—	745
Zone painting on King's highways .....	(gals.) 10,604	—	—
Zone painting on secondary highways .....	(gals.) —	—	—



Hwys. 7 and 15 — C.P.R. overhead 3 miles west of Ottawa. Photo 9558—(Ottawa)



**DISTRICT No. 10 — BANCROFT****J. E. Callaghan, P.Eng., District Engineer****CONSTRUCTION**

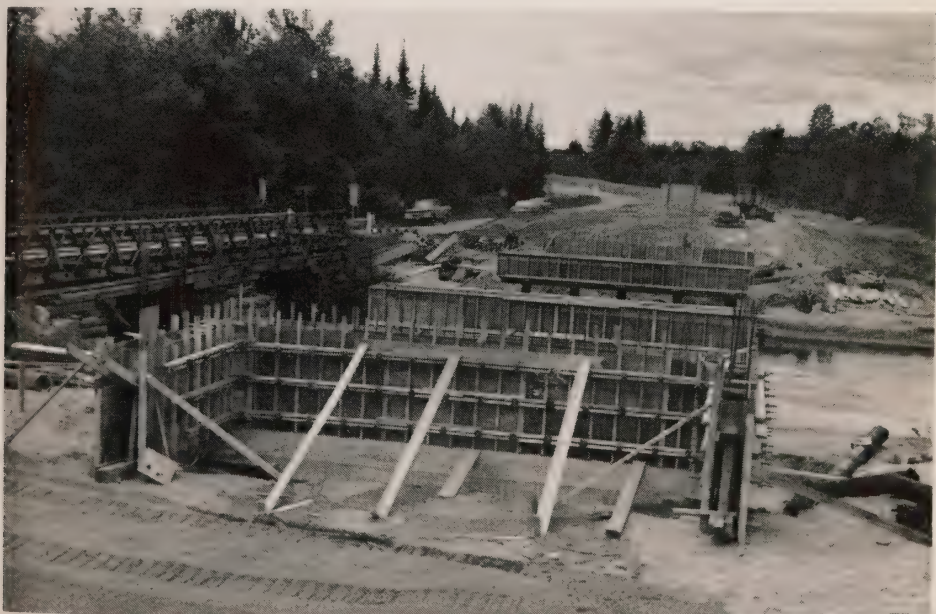
Two structures, the Sherwood River Bridge and Bonnechere River Bridge on Highway 62 (formerly Highway 521), north of Killaloe, were opened to traffic this past fiscal year. The former was a single span pre-stressed bridge and the latter a three span pre-stressed bridge. Also completed was the sub-structure of the Madawaska River Bridge at Jewellville on Highway 515.

While carrying out pile driving operations, a problem developed. A rock ledge was encountered at stream-bed elevation while attempting to drive the No. 2 "H" pile for the south pier. All other piles in this pier were driven to bed-rock about 20 feet below stream-bed. A scuba-diver (a professional engineer) was engaged to investigate the nature and extent of the rock ledge.

To prevent displacement of this pile an "H" shaped pattern was drilled in the sloping rock to a minimum depth of 6 inches to receive the "H" pile. Also, six dowels were placed 4 feet deep into the rock within the encasing tube pile as an added precaution. The base of the tube pile was cut to conform to the slope of the rock ledge and then filled with concrete. The scuba-diver made a final inspection of the pile base.

**MAINTENANCE**

A new Patrol Garage was erected at Buckhorn, and also at Kinmount on a new site.



Hwy. 521 — Bonnechere River Bridge 4 miles south of Hwy. 62. Photo 9570—(Bancroft)



A plywood dome was built at Barry's Bay Patrol Yard for the storage of treated winter sand, and proved most effective.

Maintenance contracts were completed on various Highways, including prime dust layer, surface treatment and hot mix patching. District forces carried out mulch resurfacing on Highway 503.

### Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
62	From 8.5 miles north of Bannockburn northerly 6.4 miles .....	6.4	1967	6.4	7,720 <sup>1</sup>
	TOTALS .....	6.4		6.4	7,720

<sup>1</sup>Top course

### Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	MILES IN JOB	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
500	From McArthurs Mills to Denbigh, various location patching over 26 miles .....	2.00	—	2.00	1,997
503	Tory Hill to Gooderham .....	8.00	—	4.20	6,326
512	From 2.5 miles to 3.0 miles north of Brudenell	0.50	—	0.50	1,216
519	From 2 miles east of the junction of Highways 121 and 519 easterly .....	0.65	—	0.65	1,010
620	Vicinity of Chandos Lake Park .....	0.55	—	0.55	989
	TOTALS .....	11.70	—	7.90	11,538



Hwy. 41 — Reconstruction north of Northbrook. Photo 9576—(Bancroft)

**Bituminous Prime on Gravel Roads**

HWY. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
500	From Bancroft easterly .....	8.0	15,922	592
504	From Apsley to Glen Alda .....	16.0	42,185	1,173
507	From Highway 503 southerly .....	17.0	28,337	1,798
513	From Dacre to Caldwell .....	10.0	21,622	861
515	From Quadeville to Highway 512 .....	11.0	32,187	1,429
519	Various locations .....	5.0	12,918	498
523	From 6 miles south of Highway 60 to the McClure Township Line .....	7.0	10,369	453
620	From 5 mile seast of Apsley easterly .....	4.5	12,900	503
TOTALS .....		78.5	176,440	7,307

**Bituminous Resurfacing of Old Pavement**

HWY. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			TONS PLACED	
28	Bancroft southerly .....	8.63	2,950	
121	From junction Highway 503 northerly .....	5.17	2,212	
121	From junction Highway 28 westerly .....	1.10		
648	From east junction Highway 121 northerly around loop to west junction Highway 121 .....	20.60	1,662	
TOTALS .....		35.50	6,824	

**Bituminous Surface Treatment**

HWY. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS CHIPS USED
36	From Highway 28 westerly .....	2.0	5,042	236
121	From Kinmount to junction of Highway 519 .....	5.0	10,954	619
500	From 8 miles east of Bancroft to Denbigh .....	31.0	102,398	1,848
503	From Irondale to Kinmount .....	3.5	14,826	1,298
504	From Apsley to Glen Alda .....	15.0	37,704	1,592
515	From Quadville to junction of Highway 512 .....	11.0	31,558	1,374
TOTALS .....		67.5	202,482	6,967

**Bridges Built**

HWY. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
62	Sherwood River Bridge .....	1967	1967	1967	Concrete <sup>1</sup>
62	Bonnechere River Bridge .....	1967	1967	1967	Concrete <sup>2</sup>
500	York River Bridge .....	1967	—	—	Concrete <sup>3</sup>
515	Madawaska River Bridge .....	1967	—	—	Concrete <sup>4</sup>

Length 102 feet, width 34 feet, spans — 1 at 75 feet

Length 141 feet, width 34 feet, 3 spans — 2 at 30 feet, 1 at 55 feet

Length 221 feet, width 34 feet, 3 spans, 1 at 30 feet, 1 at 45 feet, 1 at 110 feet

Length 320 feet, width 34 feet, 3 spans — 2 at 80 feet, 1 at 120 feet

## Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
41	Cloyne patrol yard (stockpiled) .....	—	4,992
41	Northbrook to 1.8 miles north of Cloyne .....	7.50	87,020
41	Denbigh patrol yard (stockpiled) .....	—	4,992
41	Denbigh northerly .....	2.00	17,628
62	8.5 miles north of Bannockburn northerly .....	6.40	9,150
62	0.2 miles south of junction of Highway 620 northerly .....	—	3,228
62	Purdy to Combermere .....	5.02	60,700
62	Combermere patrol yard (stockpiled) .....	—	9,990
62	Jack's Lake patrol yard (stockpiled) .....	—	18,711
62	Jack's Lake patrol yard (stockpiled) .....	—	2,399
62	2.9 miles north of Round Lake Centre northerly .....	0.29	1,768
62	5.0 miles north of Round Lake Centre northerly .....	0.97	11,349
121	New Kinmount patrol yard (stockpiled) .....	—	9,992
121	Tory Hill patrol yard (stockpiled) .....	—	10,098
507	2.2 miles south of Gooderham (stockpiled) .....	—	12,892
507	2.2 miles south of Gooderham (stockpiled) .....	—	2,093
515	5.6 miles south of junction of Highway 62 southerly .....	2.60	23,202
648	1.2 miles west of Highland Grove (stockpiled) .....	—	7,200
648	1.2 miles west of Highland Grove (stockpiled) .....	—	768
TOTALS .....		24.78	298,172

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
41	Denbigh northerly .....	0.50	775
127	Old Highway 127 from junction of old and new Highways 127 to junction of Highway 60, 1 mile east of Whitney .....	3.30	7,605
500	From McArthurs Mills to Denbigh, various locations over 21 miles .....	2.00	2,055
506	From 3.3 miles west of Plevna westerly 0.75 miles .....	0.25	372
507	From 0.5 miles south of Gooderham southerly .....	0.68	4,106
519	From 2.5 miles east of junction of Highways 121 and 519 easterly 0.64 miles .....	0.64	3,551
620	Chandos Lake westerly 3.5 miles .....	3.50	6,984
TOTALS .....		10.87	25,448

## Grading and Culverts

Hwy. No.	LOCATION	MILES		MILES COMPL. THIS YEAR
		IN JOB	YEAR BEGUN	
41	From Northbrook to 1.8 miles north of Cloyne .....	7.50	1967	7.50
41	From Denbigh northerly .....	5.10	1967	2.00
60	From 8.7 miles east of Algonquin Park Station Road easterly and Whitney patrol yard .....	7.27	1968	—
62	From 0.2 miles south of junction of Highway 620 northerly .....	9.24	1967	—
62	From Maple Leaf easterly to Purdy 8.6 miles (excluding a section from 1.8 miles east of Maple Leaf easterly 2.12 miles) .....	6.48	1968	—
62	From Combermere to Purdy .....	5.02	1966	5.02
62	From 2.9 miles north of Round Lake Centre northerly .....	1.00	1967	0.29
62	From 5.0 miles north of Round Lake Centre northerly .....	0.97	1967	0.97



127	From junction of Highway 62 northerly and Maynooth patrol yard on Highway 62 .....	1.30	1968	—
127	Old Highway 127 from junction of old and new Highway 127 to junction of Highway 60, 1 mile east of Whitney .....	3.30	1967	3.30
500	From 6.0 miles east of Bancroft easterly .....	1.50	1967	—
500	McArthurs Mills to Denbigh, various locations over 21 miles .....	2.00	1967	2.00
506	From 3.3 miles west Plevna westerly .....	0.75	1967	0.75
507	From 0.5 miles south of Gooderham southerly .....	0.68	1967	0.68
519	From 2.5 miles east of junction of Highways 121 and 519 easterly .....	0.64	1967	0.64
620	From Highway 62 westerly .....	0.30	1968	—
TOTALS .....		53.05		23.15

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
41	From Northbrook to 1.8 miles north of Cloyne .....	7.50	1967	7.50	231,644
41	From Denbigh northerly .....	5.10	1967	2.00	61,823
62	From 0.2 miles south of junction of Highway 620 northerly .....	9.24	1967	—	3,424
62	From Combermere to Purdy .....	5.02	1967	5.02	159,171
62	From 2.9 miles north of Round Lake Centre northerly .....	1.00	1967	0.29	1,768
62	From 5.0 miles north of Round Lake Centre northerly .....	0.97	1967	0.97	11,349
127	Old Highway 127 from junction of old and new Highways 127 to junction of Highway 60, one mile east of Whitney .....	3.30	1967	3.30	7,605
500	McArthurs Mills to Denbigh various locations over 21 miles .....	2.00	1967	2.00	2,055
506	From 3.3 miles west of Plevna westerly .....	0.75	1967	0.25	372
507	From 0.5 miles south of Gooderham southerly .....	0.68	1967	0.68	4,106
519	From 2.5 miles east of junction of Highway 121 and 519 easterly .....	0.64	1967	0.64	3,551
TOTALS .....		36.20		22.65	485,868

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
41	Eganville patrol yard .....	One standard patrolmen's operators' camp	Living accomodations	1967	1968
36	Buckhorn patrol yard .....	One standard 4-bay metal patrol garage	Equipment storage	1967	1968
121	Kinmount patrol yard .....	One standard 4-bay metal patrol garage	Equipment storage	1967	1968
121	Kinmount patrol yard .....	One standard salt shed	Salt storage	1967	1967
60 & 62	Barry's Bay patrol yard .....	One standard 80 feet salt dome	Storage of salt and sand	1967	1967



## Totals of Other Work Done

ITEM	NUMBER TOTAL	TONS TOTAL	MILES TOTAL
Bridges painted .....	6	—	—
Calcium dust layer on gravel roads .....	—	129.25	—
Calcium for de-icing roads .....	—	—	—
Development roads built .....	—	—	25.00
Off-road parks maintained .....	25	—	—
Roads snowploughed and kept open, King's highways .....	—	—	378.29
Roads snowploughed and kept open, secondary highways .....	—	—	287.48
Roadside picnic places maintained .....	6	—	—
Routine maintenance, King's highways .....	—	—	378.29
Routine maintenance, secondary highways .....	—	—	287.48
Salt for de-icing roads (raw) .....	—	7,006	—
Salt in sand, stockpiled .....	—	1,937	—
Sand for winter maintenance .....	—	74,049	—
Scale houses maintained .....	1	—	—
Seeding by department's forces ..... (acres)	222.75	—	—
Shrubs received and planted this year .....	1,793	—	—
Signs erected or replaced .....	3,503	—	—
Snow fence erected, dismantled, stored .....	—	—	20.00
Snow hedges planted this year .....	—	—	—
Traffic lights installed this year .....	—	—	—
Weed control .....	—	—	729.50
Zone painting on King's highways ..... (gals.)	8,568	—	—
Zone painting on secondary highways ..... (gals.)	3,636	—	—

**DISTRICT No. 11 — HUNTSVILLE****W. S. Aitken, P.Eng., District Engineer****CONSTRUCTION**

Widening to four lanes on Highway 11 was extended northerly 5.25 miles from Kahshe Lake Road to the south end of Gravenhurst.

A grading contract on Highway 69, from 1.7 miles east of Gravenhurst north-westerly for 8.32 miles, was well advanced by the end of the construction season and will be completed early in the summer of 1968. Completed projects on Highway 69 were paving at the Moon River Bridge in Bala and resurfacing with bituminous hot mix pavement for 4.74 miles northerly from the junction of Highway 69 with Highway 103 at Footes Bay.

The new Joseph River Bridge on Secondary Highway 632 and the approaches to the structure were paved, thus completing this particular project.

Completed projects on Highway 118 were separate grading and paving contracts between Port Carling and Milford Bay and reconstruction of 1.27 miles of the highway at its intersection with Secondary Highway 632. A grading project from Baysville westerly for 4.87 miles on Highway 118 progressed well and is expected to be completed early in the summer of 1968.

1.38 miles of Highway 124 westerly from 3.2 miles west of the east junction of Secondary Highway 520, was reconstructed as part of a project which included a new structure over the Magnetawan River and a large arch culvert at the Shadow River. Paving is the only work remaining to complete this contract.

A grading contract is in progress on Highway 35 from 7.7 miles south of Highway 118 at Dorset southerly for 8.6 miles. This project, which includes a new structure at the Ox Narrows crossing, is expected to be completed early in the summer of 1969.

As in previous years, a program of construction by Day Labour forces was continued, resulting in improvements to Highway 124 and Secondary Highways 516, 518, 530, 532 and 592. These projects were from 0.65 to 2.2 miles in length and progressed through the summer months, using local men and equipment.

**MAINTENANCE**

During the summer approximately 17 miles of mulch pavement were laid by District forces.

Other work carried out by District forces included the screening and stockpiling of about 70,000 cubic yards of winter sand and the cleaning and painting of three bridges.

The District forestry crew carried out weed control operations along 713 miles of highway and seeded approximately 182 acres of highway right of way.

Two new garages were erected, a 6-bay building at Gravenhurst and a 4-bay building at Dorset.

62 miles of King's and Secondary highways were primed, and 20 miles surface treated, by contract.

Zone painting was carried out on 535 miles of King's and Secondary highways.

Twenty-one of the District's picnic areas were maintained by contract during the peak summer period. This was the first time such work had been done by contract and the results were satisfactory.

Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES	THIS FISCAL YEAR	TONS PLACED
				COMPL. PREV. YRS.	MILES COMPL.	
11	Severn River Bridge at Village of Severn Bridge .....	1.03	1966	—	1.03	1,630
11	From Kahshe Lake Road northerly to south end of Gravenhurst .....	5.25	1966	—	5.25	60,285 <sup>1</sup>
69	Moon River Bridge 1.5 miles south of Bala north limits .....	0.40	1966	—	0.40	1,727
118	Intersection improvement at junction Highway 632 .....	1.27	1966	—	1.27	2,569
118	Port Carling to Milford Bay .....	5.20	1967	—	5.20	9,983
532	8.5 miles north of north junction of Highway 118 northerly .....	0.10	1967	—	0.10	274
632	Joseph River Bridge, 5.6 miles north of Highway 118 .....	1.17	1967	—	1.17	21,196
TOTALS .....		14.42		1.03	14.42	97,664

<sup>1</sup>Four Lane Construction



Hwy. 69 — Moon River Bridge at Bala. Photo 9832—(Huntsville)

Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	MILES IN JOB	THIS FISCAL YEAR	
			MILES COMPL.	TONS PLACED
124	1 mile south of McKellar southerly .....	1.19	1.19	1,960
124	1 mile west of Dunchurch westerly .....	0.80	0.80	1,320
124	From junction Highway 510 7.0 miles easterly, sections only .....	2.00	2.00	3,110
516	From junction Highways 516 and 532 to Winderemere (sections) .....	5.00	5.00	7,780
518	Junction of Highway 69 easterly .....	0.60	0.60	900
518	Various locations in Christie Township .....	0.90	0.90	1,400
518	Emsdale to Sprucedale (sections) .....	2.00	2.00	3,100
530	From the Village of West Guilford easterly .....	0.50	0.50	820
532	1.6 miles east of Rosseau easterly .....	2.00	2.00	3,330
592	Emsdale to Novar (sections) .....	2.00	2.00	3,100
TOTALS .....		16.99	16.99	26,820

Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
118	4.9 miles west of Highway 527 westerly .....	1.80	4,745	91
121	From 2.0 miles east of Haliburton easterly .....	1.25	3,840	64
124	From 4 miles east of McKellar easterly .....	7.50	19,780	380
514	From Highway 60 to Interlaken .....	10.00	26,370	510
518	From Highway 69 to Sprucedale (sections) .....	12.30	32,430	625
519	From 1.3 miles south of the north junction of Highway 121 southerly .....	1.50	4,610	80
520	From Dunchurch to Ardbeg .....	16.50	43,500	835
530	From 6 miles east of Carnarvon to Highway 519 ..	6.00	15,820	305
532	9 miles north of Bracebridge northerly .....	1.00	2,635	50
660	Bala northerly .....	4.00	10,540	200
TOTALS .....		61.85	164,270	3,140

Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
59TC	From Highway 103 Foote's Bay northerly .....	4.74	13,178
TOTALS .....		4.74	13,178

Bituminous Surface Treatment

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS CHIPS USED
118	From Kearney to Sprucedale (sections) .....	12.0	41,080	1,575
592	From Novar to Emsdale .....	7.8	26,700	1,025
TOTALS .....		19.8	67,780	2,600



**Bridges Built**

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
11	Severn River Bridge at the Village of Severn Bridge .....	1965	1967	1966	Steel beam
124	Magnetawan River Bridge .....	1967	1967	1967	Steel beam
124	Shadow River Arch .....	1967	1967	1967	Concrete barrel arch

<sup>1</sup>Length overall 320 feet, clear spans — 2 at 135 feet, width 70 feet

<sup>2</sup>Length 160 feet, 2 spans — 1 at 70 feet, 1 at 90 feet, width 28 feet

<sup>3</sup>Span 39.5 feet, length 114 feet

**Crushed Gravel and Stone on Roads by Contract**

Hwy. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11	Severn River Bridge, Village of Severn Bridge .....	1.03	690
11	From Kahshe Lake Road northerly to south end of Gravenhurst ....	5.25	108,081
69	Moon River Bridge, 1.5 miles south of Bala north limits .....	0.40	1,069
69	From 1.7 miles east of Gravenhurst west limits north westerly ....	8.32	78,591
69TC	Junction of Highway 103, Foote's Bay northerly .....	4.74	24,121
118	Port Carling to Milford Bay .....	4.36	32,446
118	Intersection improvement at junction of Highway 632 .....	1.27	16,290
118	Baysville westerly .....	4.87	25,324
124	3.2 miles west of the east junction of Highway 520 westerly .....	1.38	11,520
632	Joseph River Bridge, 5.6 miles north of Highway 118 .....	1.17	4,984
TOTALS .....		32.79	303,116



Hwy. 118 — Completed paving south-east of Port Carling. Photo 9835A—(Huntsville)

**Crushed Gravel and Stone on Roads by Department's Forces**

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
121	2 miles east of Village of Haliburton easterly .....	1.25	5,612
124	1 mile south of McKellar southerly .....	0.90	4,618
124	From 0.75 miles east of junction of Highway 510 easterly .....	0.65	2,453
518	From 2.9 miles east of Highway 69 easterly .....	1.50	960
519	1.3 miles south of north junction Highway 121 southerly .....	1.50	5,290
530	From 6 miles east of junction of Highway 35 easterly .....	2.20	10,136
532	1.6 miles east of Rosseau easterly .....	2.00	10,842
TOTALS .....		10.00	39,911

**Grading and Culverts**

HWY. No.	LOCATION	MILES		MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
		IN JOB	YEAR BEGUN		
11	From Kahshe Lake Road northerly to south end of Gravenhurst .....	5.25	1966	—	5.25
35	From 7.7 miles south of Highway 118 at Dorset southerly .....	8.60	1967	—	1.00
69	From 1.7 miles east of Gravenhurst west limits north westerly .....	8.32	1967	—	6.50
118	Port Carling to Milford Bay .....	4.36	1966	2.0	2.36
118	Intersection improvement at junction of High- way 632 .....	1.27	1966	—	1.27
118	Baysville westerly .....	4.87	1967	—	3.60
124	3.2 miles west of the east junction of Highway 520 westerly .....	1.38	1966	—	1.38
124	From 0.75 miles east of junction of Highway 510 easterly .....	0.65	1967	—	0.65
518	From 2.9 miles east of Highway 69 easterly .....	1.50	1967	—	0.50
530	From 6 miles east of junction of Highway 35 easterly .....	2.20	1967	—	2.20
532	1.6 miles east of Rosseau easterly .....	2.00	1966	1.5	0.50
TOTALS .....		40.40		3.5	25.21

**Granular Base on New Grading**

HWY. No.	LOCATION	MILES		MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR	
		IN JOB	YEAR BEGUN		MILES COMPL.	TONS PLACED
11	Severn River Bridge, Village of Severn Bridge .....	1.03	1965	1.03	—	3,006
11	From Kahshe Lake Road northerly to south end of Gravenhurst .....	5.25	1966	—	5.25	209,374
69	Moon River Bridge, 1.5 miles south of Bala north limits .....	0.40	1966	0.40	—	4,254
69	From 1.7 miles east of Gravenhurst west limits north westerly .....	8.32	1967	—	6.50	307,541
118	Port Carling to Milford Bay .....	4.36	1966	2.00	2.36	116,691
118	Intersection improvement at junc- tion of Highway 632 .....	1.27	1966	—	1.27	50,748
118	Baysville westerly .....	4.87	1967	—	2.60	39,036
121	2 miles east of Village of Haliburton easterly .....	1.25	1966	1.25	—	7,832

124	3.2 miles west of the east junction of Highway 520 westerly .....	1.38	1966	—	1.38	35,019
124	1.0 miles south of McKellar southerly .....	1.19	1966	1.19	—	8,248
124	From 0.75 miles east of junction of Highway 510 easterly .....	0.65	1967	—	0.65	29,609
518	From 2.9 miles east of Highway 69 easterly .....	1.50	1967	—	0.50	11,490
519	1.3 miles south of north junction of Highway 121 southerly .....	1.50	1966	1.30	0.20	23,129
530	From 6 miles east of junction of Highway 35 easterly .....	2.20	1967	—	2.20	62,569
532	1.6 miles east of Rosseau easterly .....	2.00	1966	1.50	0.50	41,371
632	Joseph River Bridge, 5.6 miles north of Highway 118 .....	1.17	1966	1.17	—	7,242
TOTALS .....		38.34		9.84	23.41	957,159

### Granular Base Where No Grading Done

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
69TC	Junction of Highway 103 Foote's Bay northerly .....	4.74	1967	4.74	26,472
TOTALS .....		4.74		4.74	26,472

### New Buildings

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
11	Gravenhurst Patrol Yard .....	6-Bay Garage	Patrol	1967	1968
118	Dorset Patrol Yard .....	4-Bay Garage	Patrol	1967	1968

### Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILE
Bridges painted .....	3	—	—
Calcium dust layer on gravel roads .....	—	280	6
Calcium for de-icing roads .....	—	—	—
Development roads built .....	2	17,000	—
Off-road parks maintained .....	26	—	—
Roads snowploughed and kept open, King's highways .....	—	—	39
Roads snowploughed and kept open, secondary highways .....	—	—	28
Roadside picnic places maintained .....	25	—	—
Routine maintenance, King's highways .....	—	—	39
Routine maintenance, secondary highways .....	—	—	28
Salt for de-icing roads (raw) .....	—	7,500	—
Salt in sand, stockpiled .....	—	2,100	—
Sand for winter maintenance .....	—	69,750	—
Scale houses maintained .....	3	—	—
Seeding by department's forces .....	(acres) 182.2	—	—
Shrubs received and planted this year .....	6,016	—	—
Signs erected or replaced .....	2,765	—	—
Snow fence erected, dismantled, stored .....	—	—	1
Snow hedges planted this year .....	Nil	—	—
Traffic lights installed this year .....	Nil	—	—
Weed control .....	(Hwys. 510-525, 660 Nil)	—	713.0
Zone painting on King's highways .....	(gals.) 9,649	—	359.1
Zone painting on secondary highways .....	(gals.) 3,621	—	176.0



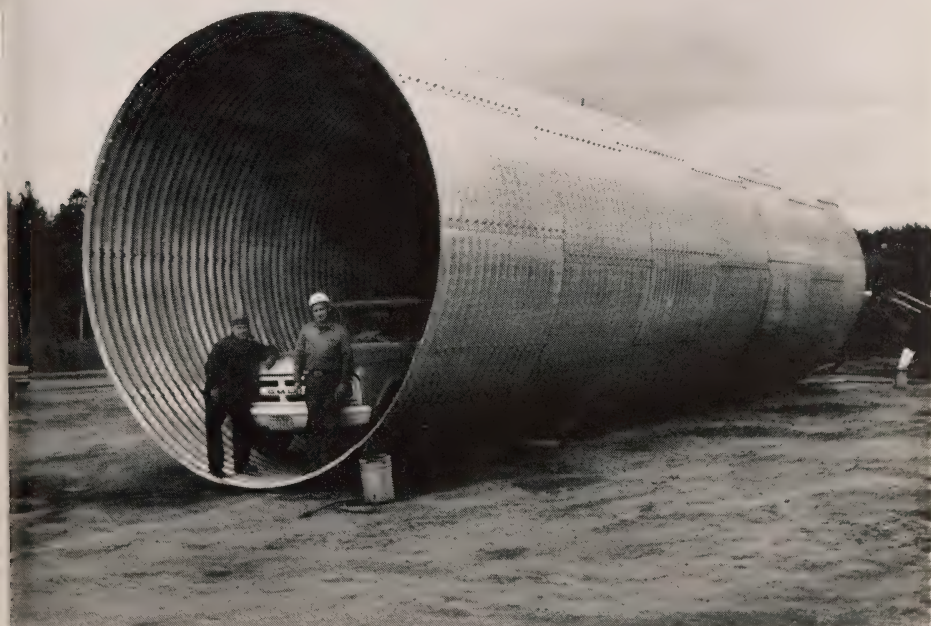
**DISTRICT No. 13 — NORTH BAY****C. E. French, P.Eng., District Engineer****CONSTRUCTION**

A grading contract awarded in 1966 for the reconstruction of Highway 17, from Deux Rivieres Creek easterly for 5.57 miles was completed by mid-summer. This section of road was paved under the 1967 program, together with Hot Mix Patching from 5.57 miles east of Deux Rivieres easterly 5.30 miles. The Deux Rivieres Patrol Yard was also constructed and paved under the Paving Contract.

A grading project 3.5 miles north of Highway 17 at Warren northerly for 1.89 miles was also completed by late summer this year.

Paving was continued on a contract west of North Bay on Highway 17 from Laronde Creek westerly to Sturgeon Falls. Sand Asphalt course with Hot Mix binder and surface course was completed throughout the length of this area, thus eliminating an old concrete surface which had existed for many years. Under a separate section of the Contract, the Champlain Bridge over the Sturgeon River and approaches received a binder and surface course of Hot Mix Asphalt. An intersection at Cache Bay Road, west of Sturgeon Falls, was re-aligned and the main highway widened to accommodate through traffic.

Highway 17, from Sturgeon Falls west limits westerly for 9.2 miles to the Junction of Highway 64 at Verner, was resurfaced. The Sturgeon Falls Patrol Yard was also constructed and paved.



Hwy. 535 — Prefabricated 17-foot culvert to be located 5 miles south of St. Charles.

Photo 10158—(North Bay)



A Grading, Drainage, Granular Base and Hot Mix Paving resurfacing contract was also completed on Highway 17 west, from the Junction of Highway 17 and Secondary Highway 539 westerly to Hagar, for a distance of 5.25 miles. The Village of Warren was also part of the contract which included such items as Grading, Drainage, Curbs and Paving.

In and around North Bay City, two major contracts were carried out. One, on Highway 123 from Junction with Highway 11 easterly 2.48 miles to Jack Garland Airport, included Grading, Drainage, Granular Base, Hot Mix Paving, Curb and Gutter and Sidewalk along with a climbing lane that was welcomed by motorists. The other contract was on Highway 63 from (former) North Bay City limits easterly for 2.46 miles. This Contract, basically Grading, Drainage, Granular Base, Hot Mix Paving, Curb and Gutter and Sewers in urban sections and realignment of intersections, included a three-span overhead bridge over the Ontario Northland Railway, thus eliminating a dangerous level crossing. A retaining wall at Trout Mills was required due to a narrow passageway between railway and Trout Lake. The Contract was approximately 90 percent completed.

A Grading contract was nearly completed on Secondary Highway 535 from 5 miles north of Highway 64 at Noelville, northerly for 3.27 miles. This project included Grading, Drainage and Granular Base. Some ditching, along with roadside trimming, remains to be finished in 1968.

On Highway 11 north, a resurfacing contract was completed from 6.1 miles north of Highway 64 to 1.35 miles north of Timagami Mine Road for a total distance of 15.2 miles. The roads within the Finlayson Provincial Park which is located approximately 0.5 miles south of Timagami were also paved under this contract. This will benefit the people using the park facilities. The Timagami Patrol Yard was also graded and paved.

Day Labour Construction continued in various areas. Grading, Drainage and Granular Base was completed on Highway 64, 18 miles north of Field for 0.75 miles; Secondary Road 522, 2.5 miles east of Commanda easterly for 2 miles; Secondary Highway 522, 6 miles west of Loring westerly one mile, Secondary Highway 630, from 4.5 miles north of Kiosk northerly for one mile.

Highway 63, Feronia north for 8 miles, preparatory work to rehabilitate the Highway for future paving was completed.

New Projects started in 1967 were on — Secondary Highway 607 from 2 miles east of Highway 69 for 1 mile; Secondary Highway 534 from 4.5 miles west of Powassan westerly 1 mile, Secondary Highway 654 from 0.5 miles west of Highway 11 for 2 miles.

## MAINTENANCE

During the past year a five bay patrol garage was erected at Timagami, extended salt sheds were constructed at St. Charles and Stonecliffe for equipment storage.

A new Maintenance Management and cost reporting system was implemented.

Day Labour crews mixed and laid approximately 15 miles of mulch pavement.

Prime Dust layer was applied on 111 miles of King's Highways and approximately 25 miles of Municipal Roads.

Approximately 14 miles of old mulch pavement received a sand seal treatment.

Precipitation during the winter was unusually light, the spring run-off was gradual and the problems were less than anticipated.

Automatic Signals at Railway Crossings

Hwy. No.	Ry. Name INITIALS	LOCATION
63	O.N.R.	0.5 miles east of North Bay — Overpass

Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
17TC	Warren to Hagar and Village of Warren .....	5.52	1967	Nil	5.52	17,107
17TC	5.3 miles west of Bissetts Creek to Deux Rivieres .....	5.57	1967	Nil	5.57	12,221
17TC	Laronde Creek westerly and Cache Bay Intersection .....	10.10	1966	2.0	8.10	27,083 <sup>1</sup>
63	North Bay City Limits easterly .....	2.46	1967	Nil	—	11,072 <sup>2</sup>
123	Junction Highway 11 to Airport .....	2.48	1967	Nil	2.48	14,968
TOTALS .....		26.13		2.0	21.67	82,451

<sup>1</sup>Two miles of Base Course laid previous year

<sup>2</sup>Base Course only

Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	MILES IN JOB	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11TC	White Fawn Lake Patrol Yard — Stockpiled .....	Nil	Nil	1,123
63	Little Jocko River southerly .....	2.0	2.0	3,600
63	Feronia northerly — Various locations .....	1.0	1.0	1,800
64	18 miles north of Field .....	1.0	1.0	1,800
94	Highway 17 southerly .....	1.0	1.0	1,200
522	2.5 miles east of Commanda .....	2.0	2.0	3,600
534	4.0 miles west of Powassan .....	1.5	1.5	2,700
535	2.5 miles south of St. Charles southerly .....	1.0	1.0	1,800
630	1.0 miles north of Kiosk northerly .....	2.0	2.0	3,600
630	4.5 miles north of Kiosk northerly .....	1.0	1.0	1,800
654	0.5 miles west of Highway 11 westerly .....	2.0	2.0	3,600
TOTALS .....		14.5	14.5	26,623

Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR GALLONS BIT. USED	TONS SAND USED
64	Field to Martin River — Various sections .....	17	49,776	1,785
64	Noelville easterly — Various sections .....	17	49,776	1,785
522	Loring westerly .....	13	38,064	1,365
524	From Highway 522 to Highway 534 .....	3	8,784	315
528 & 528A	Highway 64 to Wolseley Bay and Pine Cove .....	11	32,200	1,155
534	Powassan to Restoule — Various sections .....	13	38,064	1,365
535	Noelville northerly — Various sections .....	8	23,424	840
539 & 539A	Warren to Field — Various sections .....	23	67,344	2,415
507 & 507A	1 mile south of Highway 64 to Highway 69 .....	6	17,568	630
TOTALS .....		111	325,000	11,655

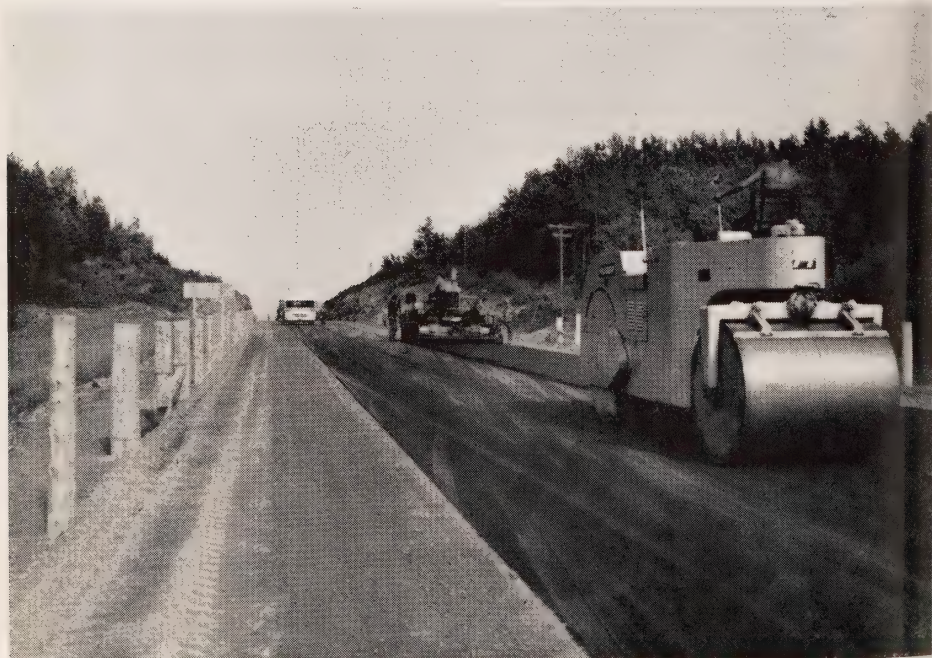
### Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11TC	6.1 miles north of Highway 64 northerly — Access Mine Road and Finlayson Park .....	15.20	29,896
11TC	North Bay By-Pass northerly Pavement Patching .....	29.00	5,513
17TC	Sturgeon Falls to Verner .....	9.24	15,631
TOTALS .....		53.44	51,040

### Bituminous Surface Treatment

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS CHIPS USED
63	Redbridge to Little Jocko River — Various sections .....	1.40	3,500	210.0
64	Two miles north of Field .....	1.25	3,125	187.5
522	Commanda easterly .....	2.70	6,750	405.0
533	Junction Highway 63 southerly .....	6.00	15,000	900.0
534	Beatty Creek .....	0.25	625	37.5
534	2.5 miles west of Nipissing .....	1.50	3,750	225.0
535	4 miles north of Noelville .....	1.00	2,500	150.0
654	5 miles from Highway 11 westerly .....	1.00	2,500	150.0
656	Junction of Secondary Highway 533 to Lacave .....	0.60	1,500	90.0
TOTALS .....		15.70	39,250	2,355.0

Screened Sand used in place of Chips



Hwy. 17 — Paving 3 miles east of Deux Rivieres. Photo 10197C—(North Bay)



Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
63	0.5 mile east of North Bay, Ontario North- land Railway Crossing .....	1967	1967	1967	Continuous <sup>1</sup> Girder
<sup>1</sup> Post Tension. Length 320 feet, width 62 feet, clearance unlimited, single span					

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11TC	6.1 miles north of Highway 64 northerly — Access Mine Road and Finlayson Park .....	15.20	54,334
11TC	North Bay By-Pass northerly .....	29.00	3,909
11TC	Timagami — Stockpiled .....	—	7,991
17TC	1 mile west of Point Alexander — Stockpiled .....	—	7,998
17TC	5.3 miles west of Bissetts Creek to Deux Rivieres .....	5.57	13,033
17TC	Laronde Creek to Sturgeon Falls and Cache Bay Intersection .....	0.20	33,997
17TC	Verner and Sturgeon Falls Patrol Yards — Stockpiled .....	—	10,000
17TC	Sturgeon Falls to Verner .....	9.24	33,332
17TC	Warren to Hagar and Village of Warren .....	5.52	37,500
63	North Bay City Limits north easterly .....	2.46	106,350
123	Highway 11 to Airport .....	2.48	42,550
533	Various locations — 5,000 stockpiled .....	16.00	15,994
535	St. Charles Patrol Yard — Stockpiled .....	—	5,000
535	5 miles north of Highway 64 northerly .....	2.70	28,506
539	3.5 miles north of Highway 17 northerly .....	1.89	20,063
530	Kiosk — Stockpiled .....	—	10,020
654	1.5 miles west of Highway 11 — Stockpiled .....	—	15,996
TOTALS .....		90.26	446,573

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11TC & 11B	4 miles north of Burks Falls to Latchford .....	135.6	6,373
17TC & 7B	14 miles west of Pembroke to Hagar .....	168.4	5,892
63	North Bay to Temiskaming .....	40.3	31
64	Rutter to junction of Highway 11 .....	96.2	3,850
94	Callander to junction of Highway 17 .....	5.5	1,383
24	Highway 11 westerly .....	4.9	30
22	Trout Creek to 12 miles west of Loring .....	52.5	3,325
28 & 28A	Highway 64 to Wolseley Bay .....	11.6	1,300
31	Highway 17 to Bonfield .....	2.4	75
33	Mattawa to junction Highway 63 .....	32.2	390
34 & 24	Powassan to Restoule .....	22.0	1,116
35	Veuve River to Noelville .....	29.9	4,029
39 & 39A	Warren to Field .....	25.6	393
407 & 407A	French River to junction Highway 64 .....	7.8	1,347
30	Highway 17 to Kiosk .....	18.5	1,221
54	Highway 11 to Nipissing .....	14.0	1,231
TOTALS .....		667.4	31,986



## Grading and Culverts

Hwy. No.	LOCATION	MILES IN	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
		JOB			
17TC	Warren to Hagar and Village of Warren .....	5.52	1967	Nil	5.52
17TC	Laronde Creek westerly and Cache Bay Inter- section .....	10.10	1966	9.90	0.20
63	Feronia northerly .....	8.00	1967	Nil	8.00
63	North Bay City Limits easterly .....	2.46	1967	Nil	2.46
64	18miles north of Field .....	0.75	1966	0.50	0.25
123	Highway 11 easterly .....	2.48	1967	Nil	2.48
522	7 miles west of Loring .....	1.00	1966	Nil	1.00
535	5 miles north of Highway 64 northerly .....	3.27	1967	Nil	3.27
539	3.5 miles north of Warren northerly .....	1.89	1967	Nil	1.89
607	Bigwood southerly .....	0.54	1967	Nil	0.54
630	4.5 miles north of Kiosk northerly .....	1.50	1966	0.50	1.00
654	Highway 11 westerly .....	2.00	1967	Nil	2.00
TOTALS .....		39.51		10.90	28.61

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
		JOB				
17TC	Warren to Hagar and Village of Warren .....	5.52	1967	Nil	5.52	87,578
17TC	Laronde Creek westerly and Cache Bay Intersection .....	10.10	1966	9.90	0.20	42,097
17TC	5.3 miles west of Bissetts Creek to Deux Rivieres .....	5.57	1967	Nil	5.57	15,320
63	Feronia northerly .....	8.00	1967	Nil	8.00	80,478
63	North Bay City Limits easterly .....	2.46	1967	Nil	2.46	117,764
64	18 miles north of Field .....	0.75	1966	0.50	0.25	14,196
123	Highway 11 easterly .....	2.48	1967	Nil	2.48	110,005
522	6 miles west of Loring .....	1.00	1966	Nil	1.00	44,031
534	4 miles west of Powassan .....	1.50	1967	Nil	1.50	46,718
535	5 miles north of Highway 64 northerly .....	3.27	1967	Nil	2.70	110,019
539	3.5 miles north of Warren northerly .....	1.89	1967	Nil	1.89	71,804
607	Bigwod southerly .....	0.54	1967	Nil	0.54	24,823
630	4.5 miles north of Kiosk northerly ..	1.50	1966	0.50	1.00	516
654	Highway 11 westerly .....	2.00	1967	Nil	2.00	30,030
TOTALS .....		46.58		10.90	35.11	795,379

## Granular Base Where No Grading Done

Hwy. No.	LOCATION	MILES IN	YEAR BEGUN	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
		JOB			
11TC	6.1 miles north of Highway 64 northerly —Access Mine Road and Finlayson Park ..	15.20	1967	15.20	58,855
17TC	Sturgeon Falls westerly .....	9.24	1967	9.24	53,660
TOTALS .....		24.44		24.44	112,515

New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
11TC	Timagami — 40 feet by 104 feet .....	Metal 5 Bay Garage	Office and Lunch Room Equip- ment Storage	1967	1967
17TC	Stonecliffe — 28 feet by 36 feet .....	Frame	Salt Storage	1967	1967
17TC	Stonecliffe — 16 feet by 36 feet .....	Frame	Loader Shed	1967	1967
17TC	Junction Highway 630 — 28 feet by 36 feet .....	Frame	Equipment Storage	1967	1967
535	St. Charles — 28 feet by 44 feet .....	Frame	Equipment Storage	1967	1967

Totals of Other Work Done

ITEM	NUMBER TOTAL	TONS TOTAL	MILES TOTAL
Bridges painted .....	7	—	—
Calcium dust layer on gravel roads .....	—	1165.5	—
Calcium for de-icing roads .....	—	10.2	—
Development roads built .....	—	—	8.26
Off-road parks maintained .....	11	—	—
Roads snowploughed and kept open, King's highways .....	—	—	454.1
Roads snowploughed and kept open, secondary highways ....	—	—	216.5
Roadside picnic places maintained .....	27	—	—
Routine maintenance, King's highways .....	—	—	454.1
Routine maintenance, secondary highways .....	—	—	216.5



Hwy. 535 — Rock excavation 10 miles north of Noelville — (Photo 10154)

Salt for de-icing roads (raw) .....	—	10,236	—
Salt in sand, stockpiled .....	—	2,104	—
Sand for winter maintenance .....	—	82,500	—
Scale houses maintained .....	2	—	—
Seeding by department's forces .....	(acres) 55	—	—
Shrubs received and planted this year .....	56	—	—
Signs erected or replaced .....	2,987	—	—
Snow fence erected, dismantled, stored .....	—	—	Nil
Snow hedges planted this year .....	1,600	—	—
Traffic lights installed this year .....	Nil	—	—
Weed control .....	—	—	400.0
Zone painting on King's highways .....	(gals.) 8,312	—	—
Zone painting on secondary highways .....	(gals.) 1,333	—	—

**DISTRICT No. 14 — NEW LISKEARD****D. A. O. White, P.Eng., District Engineer****CONSTRUCTION**

A grading and hot mix paving contract on Highway 11B from the south junction of Highway 11B and Highway 11 to the intersection of Highway 11B and Secondary Highway 567, including the Town of Cobalt (Connecting Link) was behind schedule at the end of the year. Highway 11B was paved from the intersection of Highways 11 and 11B to Cobalt, including a portion of the Connecting Link but operations had to cease for the winter due to inclement weather.

During the winter a grading and hot mix paving contract was awarded on Highway 11B, from the Intersection of Highway 11B and Secondary Highway 567 northerly to New Liskeard south limits, excluding the Town of Haileybury along with grading and paving on the Connecting Link in New Liskeard. Hot mix paving from New Liskeard northerly on Highway 11B to the junction of Highways 11B and 11, thence north on Highway 11 for 3.3 miles is included in this contract.

On Highway 67 from Highway 11 to Secondary Highway 610, the grading and granular base contract was completed in its entirety in the late fall. A grading and granular base contract was awarded from Secondary Highway 610 to Highway 101 in the late fall and the contractor completed the grubbing on the contract before shutting down for the winter.

A grading and hot mix paving contract from Secondary Highway 576 westerly on Highway 101 to Highway 144 was awarded in the late summer and the grading was completed and granular base work was well under way when operations shut down for the winter. Also, on Highway 101 a grading and hot mix paving contract was awarded early in the year from Foleyet westerly 14.6 miles along with 0.2 miles within Foleyet, 1.5 miles of granular and hot mix paving on various locations east of Foleyet and the paving of the Ivanhoe Lake Provincial Park Road. At the time of winter shutdown, the grading and granular base was completed on the section of Highway 101 west of Foleyet.

A granular base and paving contract on Highway 101 for 9.3 miles east of Matheson plus grading of the Matheson Patrol Yard and pavement patching on Highway 11 from Matheson to the Junction of Highways 101 and 11 was completed early in the summer.

Highway 144 was open for traffic for 32 miles south of Highway 101 with the completion of a major grading contract plus a granular base contract in mid-summer. Two additional major grading contracts were almost completed on this new highway at winter shutdown. Only trimming and some granular base was left to complete. Two major grading contracts were awarded in the winter, however, no work was started on these contracts. One clearing job was completed in the winter and another clearing job awarded which was almost completed at the end of the fiscal year.

The grading and granular base on Secondary Highway 576 from Highway 101 northerly 7.9 miles was completed in mid-summer and a paving contract for the paving of Secondary Highway 576 from Highway 101 to the Kam-Kotia Mine along with paving of the Timmins Patrol Yard was awarded in the summer and completed by late fall.



In the mid-summer, the grading and granular base contract for the construction of the Marter Bridge approaches at the Blanche River on Secondary Highway 624, 3 miles north of the junction of Secondary Highway 569, was completed.

Two capital seeding contracts totalling 22 acres on new Highway 144 were completed in the early fall on sections of road that had been previously constructed.

#### MAINTENANCE

The winter of 1966-67 was very moderate in terms of snowfall and storm severity. This less severe winter was reflected in a reduction in the amount of salt used on our highways by approximately 3,000 tons. Spring breakup was moderate with little trouble caused by flooding and only a relatively small amount of pavement breakup.

With respect to summer maintenance, the following items are worthy of note: 294 equivalent miles of gravel highways were treated with liquid calcium chloride for dust control; 175 miles of weed and brush spraying were carried out and approximately 640 miles of highway were zone painted. There were approximately 22 miles of mulch paving put down. Major Day Labour grading projects were carried out on Highway 560 west of Elk Lake and on Highway 66 East of Matachewan.

A 4-bay metal patrol building was completed and occupied at Larder Lake and a 6-bay patrol building was almost completed for the two new patrols to be established at Gogama. There were approximately 16 miles assumed (for maintenance operations) into the District's road system during the year. The weigh scale instal-



Hwy. 144 — Grading north of Gogama. Photo 9786D—(New Liskeard)

lation on Highway 11 north of New Liskeard was completed and put into operation. New salt sheds were constructed during the year at the Timmins and Matheson patrols.

There were 194 Sign, 88 Building and Land Use, 39 Entrance, and 9 Encroachment permits issued during the year, and 158 sign permits renewed. There were 36 permits for new signs issued.

### Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
610	ONR	Secondary Highway 610 at Hoyle .....	Bell and automatic flashing light
624	ONR	Secondary Highway 624 at .8 miles north of junction Highway 569 .....	Bell and automatic flashing light
560	CNR	Secondary Highway 560 at 8.5 miles west junction secondary Highway 560A .....	Bell and automatic flashing light

### Bituminous Hot Mix Pavement

No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
101	From 0.3 miles east of Matheson easterly	9.36	1966	5.40	3.96	6,291 <sup>1</sup>
576	From Highway 101 northerly .....	15.56	1967	—	15.56	25,774 <sup>1</sup>
101	Junction Highway 576 westerly 10.6 miles	—	—	—	—	—
101	Foleyet westerly 14.66 miles .....	—	—	—	—	—
TOTALS .....		24.92		5.40	19.52	32,065

<sup>1</sup>Base course

### Bituminous Mulch and Cold Mix

HWY. No.	LOCATION	MILES IN JOB	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
65	Elk Lake easterly sections .....	42.0	3.4	5,000
101	Timmins westerly for 35 mile sections .....	9.3	9.3	13,550
560	Junction Highway 65 Elk Lake westerly .....	6.0	5.4	8,250
610	Junction Highway 101 to Dugwal .....	3.1	3.3	4,950
TOTALS .....		60.4	21.4	31,750

### Bituminous Resurfacing of Old Pavement

HWY. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
101	From Timmins westerly to Highway 576 .....	2.0	2,181 <sup>1</sup>
101	From Matheson westerly for 4.0 miles .....	0.8	773 <sup>1</sup>
11B	From south intersection with Highway 11 northerly to secondary Highway 567 .....	4.0	11,500
11B	From secondary Highway 567 northerly to intersection Highway 11B and 65 (excl. Town of Haileybury) and from Pine Street in New Liskeard northerly to north junction Highway 11 and 11B .....	—	—
11	From north junction Highway 11 and 11B northerly 3.33 miles .....	—	—
101	From 1.5 miles east of Foleyet easterly at various locations totaling 2.0 miles within 8.0 miles .....	—	—
TOTALS .....		6.8	14,454

Patching





Hwy. 576 — Grading north of Hwy. 101. Photo 9711—(New Liskeard)

### Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	Porquis Junction southerly to Highway 577 .....	—	6,000.30
11	Sesekinika to Wavell .....	—	10,999.37
11B	Junction Highway 11 to Highway 567 .....	—	34,333.25
101	Junction Highway 610 westerly .....	—	4,942.04
101	From Highway 144 to junction Highway 616 .....	—	23,014.42
101	From Foleyet westerly .....	—	99,277.67
101	From Matheson to 9.39 miles easterly .....	—	20,401.43
65	Highway 11 easterly .....	—	5,000.93
65	New Liskeard westerly .....	—	2,999.97
66	From junction Highway 65 Easterly .....	12.00	56,992.95
67	From junction Highway 11 to junction Highway 610 .....	8.10	78,397.54
67	From junction Highway 610 to Highway 101 .....	—	10,050.32
144	From 16 miles to 24 miles south of Highway 101 .....	7.76	79,000.43
144	From 24 miles south of Highway 101 to 8.75 miles southerly .....	8.75	75,338.99
144	From 32 miles south of Highway 101 southerly 7.7 miles .....	—	44,320.43
144	From 40.46 miles south of Highway 101 southerly 7.58 miles .....	—	32,847.45
558	From Highway 11 easterly .....	—	5,999.93
558	From Highway 11 westerly .....	—	4,998.52
560	From 6 miles west of Elk Lake westerly .....	—	12,998.38
560	From 1 mile west of Shiningtree westerly .....	33.20	20,403.75
560A	From junction Highway 560 to Westree .....	6.20	3,600.00
576	From Highway 101 northerly .....	—	7,001.10
576	Highway 101 northerly .....	7.90	56,459.91
576	Highway 101 northerly .....	15.56	35,759.41
624	From 13 miles south of Highway 66 southerly .....	6.00	46,306.49
624	From 3 miles north of junction Highway 569 (Blanche River Bridge Approaches) .....	0.74	6,896.89
629	From Timmins Limits northerly .....	—	6,052.69
655	From Highway 101 northerly .....	—	4,002.82
TOTALS .....		106.21	794,397.38

## Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	At Traffic Scales, 4 miles north of New Liskeard	—	1,935.00
11	Latchford to Porquis Junction (shouldering various sections)	118	4,869.64
11B	South junction Highway 11 to north junction Highway 11	16	371.50
65	Matachewan to Quebec Border (shouldering — various sections)	82	5,741.00
66	Junction Highway 65 to Quebec Border (shouldering — various sections)	65	2,883.00
101	Foleyet easterly to Quebec Border (shouldering—various sections)	121	30,301.00
112	Highway 66 southerly to Highway 11 (shouldering — various sections)	12	8.00
558	Haileybury to Highway 11 (shouldering — various sections)	4	17.00
558	Highway 11 to Montreal River (patching)	14	477.00
560	Highway 11 to Gogama (various sections)	143	31,848.65
562	Highway 65 to Highway 11 (shouldering — various sections)	7	314.00
564	Highway 112 easterly (patching)	6	736.55
566	Matachewan northerly (patching)	15	1,885.00
567	Highway 11B southerly 21 miles (patching)	21	2,492.50
568	Highway 11 easterly	1	522.41
569	Junction Highway 624 southerly to Highway 11 (shouldering — various sections)	17	683.00
570	Highway 11 easterly (shouldering — various sections)	1	28.00
571	Junction Highway 11, Earlton to Highway 562 (shouldering — various sections)	3	30.00
572	Highway 101 to Highway 11 (shouldering and patching various sections)	10	566.00
573	Junction Highway 11 southerly to Highway 560 (shouldering — various sections)	12	264.00
576	Highway 101 northerly for 12 miles (patching)	12	24.00
577	Highway 101 northerly to Highway 11 (patching and shouldering, various sections)	7	222.16
610	Highway 101 to Connaught	9	17,536.78
616	Highway 101 to Palomar (various sections)	2	286.00
624	Highway 66 to Highway 569 (shouldering and patching, various sections)	25	791.00
626	Matheson to Porquis Junction (shouldering and patching—various sections)	20	12.00
629	Timmins northerly to airport (shouldering and patching)	5	28.00
640	Secondary Highway 571 to Earlton Airport (shoulder patching)	1	5.00
TOTALS		749	104,878.19

## Grading and Culverts

Hwy. No.	LOCATION	MILES		MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
		IN JOB	YEAR BEGUN		
11B	From 4 miles north of Latchford northerly	7.31	1966	0.34	6.97
11B	From junction Highway 567 northerly to junction Highway 11B and Highway 65 (excluding Town of Haileybury)	5.46	—	—	—
67	From west junction Highway 11 southerly to junction Highway 610	8.10	1967	—	8.10
65	Elk Lake easterly — various sections	3.00	1966	2.00	1.00
67	From junction Highway 610 to Highway 101	5.90	1967	—	—
101	From junction Highway 576 westerly to junction Highway 144	10.54	1967	—	1.50
101	Foleyet westerly 14.66 miles	14.66	1967	—	14.66



144	From 16 miles south of Highway 101 southerly	7.76	1966	7.00	.76
144	From 32.8 miles south of Highway 101 southerly	7.70	1967	—	7.70
144	From 40.6 miles south of Highway 101 southerly	7.58	1967	—	7.58
144	48.04 miles south of Highway 101 southerly				
	7.86 miles including the entrance to Gogama	9.75	—	—	—
144	51.40 miles north of Benny northerly 9.41 miles	9.41	—	—	—
560	From 6 miles west of Elk Lake westerly	2.00	1967	—	—
560	Tamarac Creek culvert and approaches (10 miles east of Elk Lake)	0.43	1967	—	0.43
576	From Highway 101 Northerly	7.90	1966	4.00	3.90
624	3 miles north of junction secondary Highway 569	0.74	1966	—	0.74
TOTALS		108.24		13.34	53.34

### Granular Base on New Grading

Hwy. No.	LOCATION	MILES	YEAR BEGUN	THIS FISCAL YEAR	
		IN JOB		MILES COMPL.	TONS. PLACED
66	From junction Highway 65 easterly .....	12.00	1967	12.00	39,000
101	1.5 miles east of Foleyet easterly at various locations totalling 2.0 miles within 8.0 miles .....	2.00	—	—	—
144	Junction Highway 101 southerly 16.25 miles	16.25	1967	5.20	7,840
560	55.9 miles south of Highway 101 southerly 12 miles .....	12.00	—	—	—
TOTALS .....		42.25		17.20	46,840

### Granular Base Where No Grading Done

Hwy. No.	LOCATION	MILES	YEAR BEGUN	THIS FISCAL YEAR	
		IN JOB		MILEAGE COMPL.	TONS. PLACED
66	From junction Highway 65 easterly .....	12.00	1967	12.00	39,000
101	1.5 miles east of Foleyet easterly at various locations totalling 2.0 miles with 8.0 miles	2.00	—	—	—
144	Junction Highway 101 southerly 16.25 miles	16.25	1967	5.20	7,840
560	55.9 miles south of Highway 101 southerly 12 miles .....	12.00	—	—	—
TOTALS .....		42.25		17.20	46,840

### New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
11	4 miles north of New Liskeard	Scale House	Traffic Scales	1966	1967
11	Englehart Patrol Yard	Salt Shed	Salt Storage	1966	1967
66	Swastika Patrol Yard	Salt Shed	Salt Storage	1966	1967
101	Matheson Patrol Yard	Salt Shed	Salt Storage	1967	1967
101	Timmins Patrol Yard	Salt Shed	Salt Storage	1967	1967
101	Timmins Patrol Yard	Patrol Garage	Equipment Garage	1967	1967
144	Gogama Patrol Yard	Patrol Garage	Equipment Garage	1967	1968 To be completed
66	Larder Lake Patrol Yard	Patrol Garage	Equipment Garage	1967	1968 To be completed

Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	2	—	—
Calcium dust layer on gravel roads ..... (Liquid)	—	1,971.08	270.0
Calcium for de-icing roads .....	—	—	—
Development roads built .....	—	—	—
Off-road parks maintained .....	—	—	—
Roads snowploughed and kept open, King's highways .....	—	—	514.0
Roads snowploughed and kept open, secondary highways .....	—	—	382.0
Roadside picnic places maintained .....	16	—	—
Routine maintenance, King's highways .....	—	—	514.0
Routine maintenance, secondary highways .....	—	—	385.0
Salt for de-icing roads (raw) .....	—	10,127	—
Salt in sand, stockpiled .....	—	1,980	—
Sand for winter maintenance .....	—	42,820	—
Scale houses maintained .....	1	—	—
Seeding by department's forces ..... (acres)	281	—	—
Shrubs received and planted this year .....	—	—	—
Signs erected or replaced .....	2,874	—	—
Snow fence erected, dismantled, stored .....	—	—	74.0
Snow hedges planted this year .....	—	—	—
Traffic lights installed this year .....	—	—	—
Weed control .....	—	—	175.7
Zone painting on King's highways ..... (gals.)	5,974	—	477.6
Zone painting on secondary highways ..... (gals.)	2,068	—	162.2

**DISTRICT No. 16 — COCHRANE**

**J. D. Foster, P.Eng., District Engineer**

**CONSTRUCTION**

Construction of Secondary Highway 631 southerly from Hornepayne progressed favourably this past construction season. Work on the first 6.72 miles due to be completed last season, was completed this year, reason for the delay being adverse weather conditions. A start was made last season on construction of an additional 7.20 miles, and this was completed this season, with the exception of the granular "A" Material.

Construction of an additional 13.1 miles scheduled to start during May of next fiscal year was begun by the contractor to take advantage of the cold weather to provide access to a granular deposit situated two miles south of the north end of the contract.

Clearing on the right-of-way on Highway 11 was completed on two sections west of Hearst. These two sections were located from 55 miles west to 75 miles west of Hearst, and from 75 miles west to 94 miles west of Hearst.

A grading, drainage, granular base, and hot mix paving contract from Ansonville to 0.66 miles south on Secondary Highway 577 which was 50% complete at the end of last year's construction season, was completed this year.

Grading, drainage, granular base, and paving of secondary highway 581 from highway 11 northerly to Remi Lake was begun and completed during this construction season.

**MAINTENANCE**

Day Labour forces carried out work of regrading a number of sections of hilly terrain on Secondary Highway 631. Approximately 240,000 cubic yards of borrow placed. 40 miles of Secondary Roads were primed using District forces and 15 miles of surface treatment was also carried out by Day Labour. 22 miles of surface treatment was carried out by contract. On May 8, Patrol Garage with salt shed and yard development was started at Longlac and a new salt shed started at Hornepayne under contract. Yard development was also carried out at Kapuskasing and Smooth Rock Falls Patrol Yards.

A new hydraulic power boom weed and brush spray unit was introduced to the District and weed and brush control was carried out on 600 miles of highway.

We experienced a moderate winter with light precipitation.

**Automatic Signals at Railway Crossings**

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
583	A.C.R.	Northern Sub-Division .....	Flashing lights and bell
		Mileage 282.78 .....	
		Township of Lowther .....	

Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	BEGUN YEAR	THIS FISCAL YEAR	
				MILEAGE COMPL.	TONS PLACED
581	From Highway 11 to Remi Lake .....	4.02	1967	4.02	4,922 <sup>1</sup>
581	From Highway 11 to Remi Lake .....	4.02	1967	4.02	1,693 <sup>2</sup>
11	Village of Moonbeam .....	0.70	1967	0.70	2,221 <sup>3</sup>
577	Ansonville southerly .....	0.66	1967	0.66	1,781 <sup>4</sup>
577	Ansonville southerly .....	0.66	1967	0.66	468 <sup>6</sup>
TOTALS .....		10.06		10.06	11.085

<sup>1</sup>H.L. 4  
<sup>2</sup>Hot Mix Sand Asphalt  
<sup>3</sup>H.L. 4 1½" Surface Course  
<sup>4</sup>H.L. 4 1½" Binder 1¼" Surface  
<sup>6</sup>Hot Mix Sand Asphalt

Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
652	Intersection Highway 574 and 652 to east end High- way 652 .....	11	38,825	1,650
579	Cochrane northerly 8 miles .....	8	32,303	1,250
574	Cochrane easterly 12 miles .....	12	34,045	1,750
583	Hearst southerly 6.0 miles .....	6	18,000	900
636	Highway 11 to Frederickhouse .....	3	6,000	450
583	Hearst northerly .....	2	8,000	300
TOTALS .....		42	137,173	6,300



Hwy. 631 — South of Hornpayne. Photo 9686A—(Cochrane)



**Bituminous Surface Treatment**

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BITUMULS USED	TONS CHIPS USED
11	Fraser River 29.9 miles westerly to Petersons Creek ..	29.9	80,653	2,285

**Bridges Built**

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
631	7.0 miles south of Hornepayne .....	1966	1967	1967	Steel Beam

**Crushed Gravel and Stone on Roads by Contract**

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	From Nagagami River to Pagwa River .....	30.6	30,000 <sup>1</sup>
574	From 3.0 miles east of Cochrane to Norembega .....	15.0	10,009 <sup>2</sup>
577	Ansonville to Monteith .....	8.0	13,997 <sup>3</sup>
579	From 0.69 miles north of Cochrane to Gardiner .....	18.9	9,999
625	Highway 11 to Caramat (Various locations) .....	20.0	19,995 <sup>4</sup>
583	Meade to Lac Ste. Therese .....	26.6	19,987 <sup>5</sup>
631	Hornepayne 22 miles northerly (Various locations) .....	22.0	20,000 <sup>6</sup>
TOTALS .....		141.1	123,987

<sup>1</sup>Shouldering 40 to 70 miles west of Hearst<sup>2</sup>2,000 tons stockpiled<sup>3</sup>7,999 tons stockpiled<sup>4</sup>6,779 tons stockpiled<sup>5</sup>3,597 tons stockpiled<sup>6</sup>4,609 tons stockpiled**Crushed Gravel and Stone on Roads by Department's Forces**

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	Cochrane to Porquis junction .....	30.0	141
11	Cochrane to Hearst .....	133.0	579
11	Hearst to Longlac .....	130.0	296
67	Iroquois Falls to Highway 11 .....	6.0	39
11B	Old Highway through Hanna Township .....	6.2	124
11B	Old Highway through Huntla .....	9.5	60
SECONDARY HIGHWAYS			
574	Cochrane to Norembega .....	18.0	585
577	Ansonville to Monteith .....	8.0	6,371
578	Herman Lake to Montrock .....	6.0	1,608
579	Cochrane to Gardiner .....	18.0	326
581	Intersection Highway 11 and 581 north .....	3.5	7
583	Hearst to Meade .....	23.0	1,661
625	Junction Highway 11 and 625 to Caramat .....	20.0	693
631	Junction Highway 11 and 671 to Hornepayne .....	46.0	2,297
636	Junction Highway 11 and 636 to Frederickhouse .....	3.0	27
652	Junction Highway 574 and 652 easterly to east end .....	11.0	803
TOTALS .....		471.2	15,617

Grading and Culverts

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
631	From 6.72 miles south of Hornepayne southerly 8.29 miles .....	8.29	1966	6.00	2.29
581	From Highway 11 northerly to Remi Lake .....	4.02	1967	Nil	4.02
	TOTALS .....	12.31		6.00	6.31

Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
631	From 6.72 miles south of Horne- payne southerly 8.29 miles .....	8.29	1966	4.00	4.29	31,471
	NOTE: The figure shown under tons placed represents sand cushion only as the granular A will be placed next fiscal year					
581	From Highway 11 northerly to Remi Lake .....	4.02	1967	Nil	4.02	124,157
	TOTALS .....	12.31		4.00	8.31	155,628

Totals of Other Work Done

ITEM	NUMBER TOTAL	TONS TOTAL	MILES TOTAL
Bridges painted .....	2	—	—
Calcium dust layer on gravel roads .....	—	831	—
Calcium for de-icing roads .....	—	—	—
Development roads built .....	—	—	—
Off-road parks maintained .....	—	—	—
Roads snowploughed and kept open, King's highways .....	2	—	318.00
Roads snowploughed and kept open, secondary highways ...	11	—	207.00
Roadside picnic places maintained .....	12	—	—
Routine maintenance, King's highways .....	2	—	318.00
Routine maintenance, secondary highways .....	11	—	207.00
Salt for de-icing roads (raw) .....	—	3,769	—
Salt in sand, stockpiled .....	—	906	—
Sand for winter maintenance .....	—	12,623	—
Scale houses maintained .....	5	—	—
Seeding by department's forces .....	(acres) 100.5	—	—
Shrubs received and planted this year .....	441	—	—
Signs erected or replaced .....	1,714	—	—
Snow fence erected, dismantled, stored .....	—	—	6.50
Snow hedges planted this year .....	—	—	—
Traffic lights installed this year .....	—	—	—
Weed control .....	(gals.) 907	—	601.85
	(lbs.) 7,800	—	601.85
Line painting on King's highway .....	(gals.) 2,746	—	327.60
Line painting on secondary highways .....	(gals.) 81	—	7.20

**DISTRICT No. 17 — SUDBURY****T. A. Sharpe, P.Eng., District Engineer****CONSTRUCTION**

Several contracts were carried over from last year and were completed this season. These included four separate structures over the Whitson Creek on Highway 634 which were constructed under two separate contracts and which also included the completion of 3.2 miles of grading, drainage, granular base and hot mix paving.

2.8 miles of new alignment on Highway 144 was completed from secondary highway 544 westerly to Windy Lake Park entrance including a structure over the Windy Creek and the paving of the roads in Windy Lake Provincial Park.

The Sudbury-Timmins Highway 144 was extended farther to 15.9 miles north of Benny with the completion of a contract for grading, drainage and granular base 7.9 miles in length. This contract also included an additional 8 miles of clearing on new alignment to the north. A 1967 grading, drainage and granular base contract is now underway on this cleared section as well as further clearing to a point 32 miles north of Benny.

Another clearing contract was completed from Cartier to 2.5 miles north of Benny on revised alignment of Highway 144. A structure was also completed over the Bailey Creek, north of Benny on Highway 144.

Also, on Highway 144, a contract 10.5 miles in length for grading, drainage and hot mix paving has been started from 0.3 miles west of Belanger Street, Azilda north-westerly 7.15 miles.

Two contracts were completed for resurfacing and frost heave treatments on Highway 69 from Sudbury south limits southerly to the junction of Secondary Highway 637, a total of 21 miles. Another contract for grading, drainage, granular base and hot mix paving was partially completed from the Junction of Highway 606 and 17 westerly on Highway 17 a distance of 4.9 miles.

On Secondary Highway 538, just east of Algoma Mills, a structure was completed over the Lauzon Creek. On Secondary Highway 551, the clearing was completed on 2.02 miles of new alignment which is to be followed with grading, drainage and granular base in 1968.

**MAINTENANCE**

Normal maintenance operations continued throughout the District during 1967-68.

The painting of 7 bridges was completed by contract.

Alignment, shoulder and drainage improvements to Secondary Highways were extensively carried out on a continuing priority basis.

One 4 bay metal patrol building was completed at Rutter.

Abnormally high flooding conditions occurred during the Spring run-off with correspondingly high costs for remedial measures, however the precipitation during the winter of 1967-68 was abnormally low and this was reflected in decreased expenditures for winter control operations.

Building permits and encroachment permits were approved (92 entrances, 148 buildings, and 9 encroachments).

## Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
Old 17	C.P.R.	Whitefish to Bay Street .....	Automatic protection <sup>1</sup>

<sup>1</sup>Level Crossing

## Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
17	From secondary Highway 606 westerly 4.9 miles .....	—	1967	—	—	2,041 <sup>1</sup>
17	From 9.2 miles west of secondary High- way 606 westerly to Sudbury east limits .....	8.20	1967	—	8.20	3,170 <sup>2</sup>
68	LaCloche Channel to Goat Island Channel .....	7.94	1967	—	7.94	12,470
69TCH	From Sudbury south limits to junction of Highway 69 and secondary High- way 537 .....	10.63	1966	2.10	8.53	19,326
69TCH	From junction Highway 69 and second- ary Highway 537 to junction of High- ways 69 and 637 .....	11.33	1967	—	11.33	33,215
69TCH	Various locations — from junction of Highway 644 and 69 northerly to French River Bridge .....	33.40	1967	—	33.40	326 <sup>2</sup>
144	From junction of Highways 544 and 144 westerly to Windy Lake Park Turnoff .....	2.70	1967	—	2.70	7,515
634	1.2 and 4.7 miles west of Highway 69 north .....	1.21	1967	—	1.21	3,779
634	8.5 and 9.5 miles west of Highway 69 north .....	1.00	1967	—	1.00	4,134
634	7.4 miles west of Highway 69 north ....	0.30	1967	—	0.30	298
TOTALS .....		76.71		2.10	74.61	86,274

<sup>1</sup>Patching of Excavations<sup>2</sup>Spot Patching

## Bituminous Mulch and Cold Mix

HWY. No.	LOCATION	MILES IN JOB	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
17TCH	Department of Highways Patrol Yard (Whitefish) .....	—	—	402 <sup>1</sup>
69	Department of Highways Patrol Yard (Capreol) .....	—	—	396 <sup>1</sup>
59TCH	Department of Highways Patrol Yard McFarlane Lake) ....	—	—	604 <sup>1</sup>
144	Department of Highways Patrol Yard (Chelmsford) .....	—	—	294 <sup>1</sup>
542	3.7 miles west of junction Highway 68 westerly 0.5 miles ..	0.5	0.5	950 <sup>2</sup>
542	0.7 miles east of junction Highway 551 westerly 1.4 miles ..	1.4	1.4	2,660 <sup>2</sup>
551	Junction Highway 542 northerly 0.5 miles .....	0.5	0.5	950 <sup>2</sup>
TOTALS .....		2.4	2.4	6,256

## Stockpiled Cold Mix

Mix in place, Road Mulching, Rate Application,  $\frac{5}{8}$ " Type "A" at 1,000 cubic yards per mile.  
Conversion factor to tons at 1.9 tons per Cubic Yard



### Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
17	Nairn easterly .....	1.0	2,496	104
68	South Baymouth northerly .....	14.0	34,944	1,450
144	2.4 miles north of Benny northerly .....	5.9	14,726	611
526	From Highway 69 to Britt .....	2.3	5,741	238
529	From north junction of Highway 69 to Highway 529A .....	12.2	30,451	1,264
529A	From Highway 529 to Bayfield Wharf .....	3.0	7,488	311
540	From Highway 542 westerly .....	11.6	28,954	1,201
540A	From Highway 540 westerly .....	2.7	6,739	280
540B	From junction Highway 540 northerly .....	1.2	2,995	124
542	From Highway 68 to 2.5 miles west of Mindemoya ....	19.0	47,424	1,968
542A	From Highway 542 to Tehkummah .....	1.5	3,744	155
549	From Highway 17 southerly to Lake Penage .....	9.0	22,464	932
551	From Highway 542 northerly .....	6.0	14,976	621
637	From Highway 69 to Killarney .....	42.0	104,823	4,355
644	From Highway 69 westerly .....	0.5	1,248	52
645	From Highway 69 westerly .....	2.5	6,240	259
TOTALS .....		134.4	335,453	13,925

### Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	THIS FISCAL YEAR	
				OPENED TO TRAFFIC	TYPE OF STRUCTURE
144	Bailey Creek — 7.19 miles north of Benny	1967	1967	1967	Pre-stressed <sup>1</sup>
538	Lauzon River Bridge — 0.3 miles east of Highway 17 .....	1967	1967	1967	Rigid frame <sup>2</sup>
634	Whitson River Bridge — 1.2 miles west of Highway 69 north .....	1967	1967	1967	Rigid frame <sup>3</sup>
634	Whitson River Bridge — 4.7 miles west of Highway 69 north .....	1967	1967	1967	Rigid frame <sup>4</sup>

<sup>1</sup>Width 28 feet, length 100 feet, span 80 feet, clearance unlimited

<sup>2</sup>Width 26 feet, length 76 feet, span 40 feet, clearance unlimited

<sup>3</sup>Width 30 feet, length 70 feet, span 30 feet, clearance unlimited

<sup>4</sup>Width 30 feet, length 96 feet, span 52 feet, clearance unlimited

### Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
17	From junction Highways 17 and 606 westerly .....	4.90	15,848
68	From LaCloche Channel to Goat Island Channel .....	7.94	8,302
69TC	From Sudbury limits southerly to junction Highway 69 and 537	8.53	33,728
69TC	From secondary Highways 537 and 69 southerly to junction 69 and 637 .....	11.33	70,819
144	From junction 544 and 144 to Windy Lake Park Turnoff ..	2.70	31,946
144	From 8.49 miles north of Benny northerly 7.53 .....	7.53	52,938
144	Bailey Creek Bridge — 7.19 miles north of Benny .....	0.15	560
144	From .3 miles west of Belanger Street westerly to Dowling C.P.R. Crossing .....	0.50	1,716
538	Lauzon River Bridge — .3 miles east of Highway 17 .....	0.09	941
634	8.5 and 9.5 miles west of Highway 69 north .....	1.00	8,766
634	1.2 and 4.7 miles west of Highway 69 north .....	1.21	17,156
TOTALS .....		45.88	242,720

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	LOCATION	THIS FISCAL YEAR
		TONS PLACED
17	Department of Highways Patrol Yard at Massey .....	9,997
17	3.3 miles east of Highway 557 .....	7,998
Old 17	3.7 miles west of Worthington .....	9,998
68	10.6 miles south of junction Highway 540 .....	5,000
68	18.7 miles south of junction Highway 540 .....	5,000
68	28.5 miles south of junction Highway 540 .....	3,999
68	38.7 miles south of junction Highway 540 .....	2,997
540	3.0 miles east of Silverwater .....	1,497
540	6.4 miles east of Silverwater .....	9,014
540	4.2 miles west of Silverwater .....	4,973
540	3.0 miles east of Meldrum Bay .....	5,015
540B	Department of Highways Patrol Yard at Gore Bay .....	15,999
542	Department of Highways Patrol Yard at junction of Highways 542 and 542A .....	2,999
542	Department of Highways Yard Mindemoya .....	21,992
542	4.8 miles west of east junction of Highway 551 .....	5,010
542	16.0 miles west of east junction of Highway 551 .....	4,987
542	21.1 miles west of east junction of Highway 551 .....	5,002
542	6.3 miles east of east junction of Highway 551 .....	2,992
TOTAL .....		124,469



Hwy. 68 — Rock cut at Whitefish Falls. Photo 10171A—(Sudbury)

## Grading and Culverts

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
17	From Secondary Highway 606 westerly 4.9 miles .....	4.90	1967	—	4.90
69TC	From Sudbury South Limits southerly to junction Highways 69 and 537 .....	10.63	1966	2.10	8.53
69TC	From junction Highways 69 and 537 southerly to junction Highways 69 and 637 .....	11.33	1967	—	11.33
144	From junction Highways 144 and 544 westerly to Windy Lake Park Turnoff .....	2.70	1967	—	2.70
144	From 8.49 miles north of Benny northerly 7.53 miles .....	7.53	1967	—	7.53
542	Village of Big Lake westerly .....	0.50	1966	0.20	0.30
542	2.0 miles east of Highway 551 easterly .....	0.80	1967	—	0.80
549	Various locations — from junction 17 and 549 southerly .....	7.00	1966	2.00	5.00
634	8.5 and 9.5 miles west of Highway 69 north .....	1.00	1966	0.70	0.30
634	1.2 and 4.7 miles west of Highway 69 north .....	1.21	1967	—	1.21
634	7.4 miles west of Highway 69 north .....	0.75	1966	0.30	0.45
658	Newly assumed Highway to Fairbanks Lake Park .....	6.90	1967	—	6.90
TOTALS .....		55.25		5.30	49.95

## Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
17	From Secondary Highway 606 and 17 westerly .....	4.90	1967	—	4.90	29,309
69TC	From Sudbury South Limits southerly to junction Highways 69 and 537 .....	10.63	1966	2.10	8.53	43,705
69TC	From junction Highways 69 and 537 southerly to junction Highways 69 and 637 .....	11.33	1967	—	11.33	85,535
144	From junction Highways 144 and 544 to Windy Lake Park Turnoff .....	2.70	1967	—	2.70	37,804
144	From 8.49 miles north of Benny northerly 7.53 miles .....	7.53	1967	—	7.53	70,762
144	Bailey Creek Bridge — 7.19 miles north of Benny .....	0.15	1967	—	0.15	657
144	From 0.3 miles west of Belanger Street (Azilda) westerly to Dowl- ing C.P.R. Crossing .....	7.15	1967	—	0.50	5,669
538	Lauzon River Bridge — 0.3 miles east of Highway 17 .....	0.09	1967	—	0.09	3,475
542	Village of Big Lake westerly .....	0.50	1967	—	0.50	51,897
542	2.0 miles east of Highway 551 easterly .....	0.80	1967	—	0.80	37,545
549	Various locations from Highway 17 southerly .....	7.00	1967	—	7.00	7,433
549	2.4 miles south of Highway 17 southerly .....	0.50	1967	—	0.50	22,325



634	8.5 and 9.5 miles west of Highway 69 north .....	1.00	1966	—	1.00	42,703
634	1.2 and 4.7 miles west of Highway 69 north .....	1.21	1967	—	1.21	12,841
634	Between Val Caron and Chelmsford .....	0.75	1967	—	0.75	1,735
634	7.4 miles west of Highway 69 north .....	0.30	1967	—	0.30	75,552
658	Newly assumed Highway to Fairbanks Lake Park .....	6.90	1967	—	6.90	6,935
TOTALS .....		63.44		2.10	54.69	535,882

### Granular Base Where No Grading Done

Hwy. No.	LOCATION	MILES	YEAR BEGUN	THIS FISCAL YEAR	
		IN JOB		MILES COMPL.	TONS PLACED
17TC	2.1 miles west of Highway 549 westerly .....	5.0	1967	5.0	1,698
17	1.4 miles east of junction Old Highway 17 and 17 at Nairn easterly .....	3.6	1967	3.6	5,415
69	Various locations — Old Highway 69 .....	3.0	1967	3.0	13,551
537	From Highway 69 south easterly .....	0.6	1967	0.6	7,022
540	Lots 25 to 30 Burpee Township .....	1.0	1967	1.0	56,968
TOTALS .....		13.2		13.2	84,654



Hwy. 144 — Grading 12 miles north of Benny. Photo 9651E—(Sudbury)



## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
69TC	Department of Highways Patrol Yard, Rutter, 0.2 miles south of junction Highways 69 and 64 .....	4 bay metal patrol garage	Patrol Garage	1967	1968
68	Department of Highways Patrol Yard, Whitefish Falls .....	1 standard frame Depart- ment of High- ways salt shed	Salt storage	1967	1967
144	Department of Highways Patrol Yard, Cartier .....	1 standard frame Depart- ment of High- ways salt shed	Salt storage	1967	1967

## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	7	—	—
Calcium dust layer on gravel roads .....	—	8675.89	329.20
Calcium for de-icing roads .....	—	—	—
Development roads built .....	—	—	—
Off-road parks maintained .....	16	—	—
Roads snowploughed and kept open, King's highways .....	—	—	367.79
Roads snowploughed and kept open, secondary highways .....	—	—	403.50
Roadside picnic places maintained .....	15	—	—
Routine maintenance, King's highways .....	—	—	367.79
Routine maintenance, secondary highways .....	—	—	440.30
Salt for de-icing roads (raw) .....	—	9049.66	—
Salt in sand, stockpiled .....	—	2007.92	—
Sand for winter maintenance .....	—	47923.00	—
Scale houses maintained .....	1	—	—
Seeding by department's forces .....	(acres) 187.5	—	—
Shrubs received and planted this year .....	34	—	—
Signs erected or replaced — Includes guide rail and snow- plough markers .....	11,744	—	—
Snow fence erected, dismantled, stored .....	—	—	5.90
Snow hedges planted this year .....	700	—	—
Traffic lights installed this year .....	1	—	—
Weed control .....	—	—	441.30
Zone painting on King's highways .....	(gals.) 5,408	—	286.30
Zone painting on secondary highways .....	(gals.) 3,114	—	152.30

**DISTRICT No. 18 — SAULT STE. MARIE****J. A. Knowles, P.Eng., District Engineer****CONSTRUCTION**

Work on Highway 17, from Bruce Mines limits west for 6.55 miles was completed. This was basically a grading and paving contract following the old alignment with minor revisions bringing this stretch of highway to Trans Canada Standard.

Work on Highway 17, from Montreal River southerly for 11.13 miles was completed. This work consisted of extensive changes to the alignment and grade bringing this stretch of the Lake Superior route to Trans Canada Standards (including Truck Climbing Lanes).

Work on Highway 101 and 129, from Chapleau south limits southerly for 6.96 miles continues with an expected completion date of early in 1968. This work includes a structure over the Nebskwashi River.

Work on Highway 129, from 1.8 miles south of south junction of Highways 101 and 129 Southerly for 9.08 miles continued with an expected completion date early in the 1968-1969 construction season.

Work on Highway 614 from 9.0 miles south of Manitouwadge southerly for 9.46 miles was completed and a new 12.2 mile section was commenced as a link to Highway 17. Work on Highway 651 from the intersection of Highway 101 northerly to Dalton continues with 9.06 miles being completed during the 1967-68 construction season and the balance of 7.97 miles including structures over the Windermere River and Ogasiwi Creek to be completed this year. When this road is completed it will provide access to Highway 101 for the Towns of Dalton, Missanabi and Renabie.



Hwy. 101—Michipicoten River Bridge east of Hawk Junction. Photo 9792—(Sault Ste. Marie)

Sand asphalt and some H.L.4 was placed on 20 miles of Highway 101 with the remainder to be completed in 1968-69. This, however, did reduce maintenance cost.

Highway 129, Contract 65-07, the deck was completed thus eliminating the traffic crossing the Bailey Bridge.

#### MAINTENANCE

1 Salt Shed completed at Agawa.

1 Salt Shed completed at Echo Bay.

1 5-Bay Garage completed at Goulais.

1 5-Bay Garage 80% completed at Chapleau.

Highway 651 from Highway 101 to Dalton nearing completion.

New Patrol Site for Manitouwadge reserved with a deep water well obtained.

New Patrol Site for Missinabie reserved.

Highway 651 opened from junction with Highway 101 northerly 9.0 miles.

#### Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
101	A.C.R.	Crossing of Highway 101 and Algoma Central Railway — Mileage 157.4 .....	Flashing light signals and bell
552	A.C.R.	Crossing of Highway 552 and Algoma Central Railway — Mileage 16.25 .....	Flashing light signals and bell
561	C.P.R.	Crossing of Highway 561 and Canadian Pacific Railway — Mileage 95.31 .....	Flashing light signals and bell
638	C.P.R.	Crossing of Highway 638 and Canadian Pacific Railway — Mileage 116.13 .....	Flashing light signals and bell

#### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	THIS FISCAL YEAR	
				MILES COMPL.	TONS PLACED
17TC	0.63 miles east to 0.89 miles west of the Desbarats River .....	1.52	1966	1.52	2,961
17TC	19.0 miles north of Highway 563 northerly to Montreal River .....	11.13	1966	11.13	28,774
17TC	From Bruce Mines West Limits westerly ..	6.55	1967	6.55	12,005
101	From 21.5 miles west of Big Pine Lake westerly to junction of Highway 547 ....	26.20	1967	26.20	23,343
556	From junction Highway 552 northerly to Searchmount .....	15.80	1966	15.80	16,352
TOTALS .....		61.20		61.20	80,435



Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	MILES	THIS FISCAL YEAR	
		IN JOB	MILES COMPL.	TONS PLACED
129	From junction Highway 17 northerly .....	3.5	3.5	5,250
550	From junction Highways 550 and 565 westerly .....	1.5	1.5	2,250
552	From junction Highway 17 westerly and easterly .....	0.9	0.9	1,350
	TOTALS .....	5.9	5.9	8,850

Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	MILES	THIS FISCAL YEAR	
		COMPL.	GALLONS BIT. USED	TONS SAND USED
561	From 1.0 miles north of Bruce Mines northerly .....	1.7	8,000	368
563	From junction of Highway 17 to end of Highway .....	2.0	8,000	723
	TOTALS .....	3.7	16,000	1,091

Bituminous Surface Treatment

Hwy. No.	LOCATION	MILES	THIS FISCAL YEAR	
		COMPL.	GALLONS BIT. USED	TONS CHIPS USED
17TC	Montreal River to Speckle Trout Creek — Various locations .....	3.0	10,000	462
17B	Town of Thessalon .....	0.7	2,500	126
548	From 2.0 miles south of Richards Landing .....	2.5	7,000	357
556	From junction Highway 17 to junction Highway 552 .....	3.0	10,000	600
561	From 1.0 miles north of Bruce Mines northerly .....	1.7	6,302	546
563	From junction of Highway 17 to end of Highway .....	3.4	12,000	588
	TOTALS .....	14.3	47,802	2,679



Hwy. 17 — Paving completed south of the Montreal River. Photo 9794—(Sault Ste. Marie)



**Bridges Built**

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
17TC	Stoby Creek Bridge 1.5 miles east of Desbarats — Site No. 385-180 .....	1967	1967	1967	Concrete Rigid Frame <sup>1</sup>
129	Mississagi River Bridge 1.5 miles south of Aubrey Falls — Site No. 50-12 .....	1966	1967	1967	Steel Truss <sup>2</sup>
D.R. 815 5th Line	Bridgeland River Bridge at Little Rapids — Site No. 385-198 .....	1967	1967	1967	Steel Beam <sup>3</sup>
	City Sault Ste. Marie .....	1967	1967	1967	Concrete Rigid Frame <sup>4</sup>

<sup>1</sup>Replacement of Curb and Handrail to existing Structure. Length 46 feet, width 36 feet, 1 span at 40 feet

<sup>2</sup>Length 306 feet 8 inches, width 28 feet, 3 spans at 68 feet 4 inches, 1 at 170 feet

<sup>3</sup>Length 67 feet 6 inches, width 24 feet, 1 span at 65 feet

<sup>4</sup>Length 69 feet, width 22 feet, 1 span at 61 feet

**Crushed Gravel and Stone on Roads by Contract**

Hwy. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
17TC	Various locations .....	—	4,297
17TC	From 19 miles north of Highway 563 northerly .....	11.13	171,682
17TC	From Bruce Mines West Limits westerly .....	6.55	95,786
101 & 129	From Chapleau southerly to south junction of Highway 101 .....	5.00	18,083
129	From junction of Highway 17 northerly .....	20.00	4,665
546	From 33 miles north of the junction of Highways 546 and 17 northerly .....	1.00	1,293
548	Town of Richards Landing .....	0.20	510
548	From Richards Landing to Hilton Beach south side — Various locations .....	—	2,629
548	From Hilton Beach northerly .....	2.80	8,844
552	From junction of Highway 17 westerly .....	0.90	273
563	From junction of Highway 17 to end of Highway .....	3.40	693
614	From 9.0 miles south of Manitouwadge southerly .....	9.46	72,140
651	From junction of Highway 101 northerly .....	9.06	47,317
TOTALS .....		69.50	428,212

**Crushed Gravel and Stone on Roads by Department's Forces**

Hwy. No.	LOCATION	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
129	From junction of Highway 17 northerly over 20 miles .....	20.0	4,665
546	From 33 miles north of the junction of Highways 546 and 17 northerly .....	1.0	1,293
548	Town of Richards Landing .....	0.2	510
548	From Richards Landing to Hilton Beach south side — Various locations .....	—	2,629
548	From Hilton Beach northerly .....	2.8	8,844
552	From junction of Highway 17 westerly .....	0.9	273
563	From junction of Highway 17 to end of Highway .....	3.4	693
TOTALS .....		28.3	18,907

## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. THIS YEAR
17TC	From 19 miles north of Highway 563 northerly .....	11.13	1966	11.13
17TC	From Bruce Mines West Limits westerly .....	6.55	1967	6.55
101 & 129	From Chapleau southerly to south junction of Highway 101 .....	6.96	1967	5.00
129	From 1.8 miles south of south junction of Highway 101 southerly .....	9.10	1967	4.00
546	From 33 miles north of the junction of Highways 546 and 17 northerly .....	1.00	1967	1.00
548	Town of Richards Landing .....	0.20	1967	0.20
548	From Hilton Beach northerly .....	2.80	1967	2.80
561	From Bruce Station northerly .....	1.74	1967	1.74
614	From 9.0 miles south of Manitouwadge southerly .....	9.46	1967	9.46
638	From Thessalon River Bridge to Wing's Sideroad .....	4.00	1967	4.00
651	From junction of Highway 101 northerly .....	9.06	1966	9.06
651	From 9.0 miles north of Highway 101 northerly .....	7.97	1967	5.00
TOTALS .....		69.97		59.94

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
17TC	From 19 miles north of Highway 563 northerly .....	11.13	1966	4.00	7.13	208,295
17TC	From Bruce Mines West Limits westerly .....	6.55	1967	—	6.55	190,967
101 & 129	From Chapleau southerly to south junction of Highway 101 .....	6.96	1967	—	5.00	75,901
129	From 1.8 miles south of south junction of Highway 101 southerly ..	9.10	1967	—	4.00	500
546	From 33 miles north of the junction of Highways 546 and 17 northerly .....	1.00	1967	—	1.00	3,878
548	Town of Richards Landing .....	0.20	1967	—	0.20	2,221
548	From Hilton Beach northerly .....	2.80	1967	—	2.80	26,224
561	From Bruce station northerly .....	1.74	1967	—	1.74	23,878
614	From 9.0 miles south of Manitou- wadge southerly .....	9.46	1967	—	9.46	199,593
638	From Thessalon River Bridge to Wing's Sideroad .....	4.00	1967	—	4.00	20,442
51	From junction of Highway 101 northerly .....	9.06	1966	5.00	4.06	72,490
51	From 9.0 miles north of Highway 101 northerly to Dalton .....	7.97	1967	—	5.00	700
TOTALS .....		69.97		9.00	50.94	825,089

**Granular Base Where No Grading Done**

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
548	From Richards Landing to Hilton Beach — Various locations .....	—	1967	—	—	17,516
	TOTAL .....					17,516

**New Buildings**

HWY. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
17	Echo Bay Patrol Yard .....	Salt Shed	Store Salt	1967	1967
17	Agawa Patrol Yard .....	Salt Shed	Store Salt	1967	1967
17	Goulais River Patrol Yard .....	5-Bay Metal Patrol Garage	House Equipment	1967	1967
129	Chapleau Patrol Yard .....	5-Bay Metal Patrol Garage	House Equipment	1967	1967

**Totals of Other Work Done**

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	—	—	—
Calcium dust layer on gravel roads .....	—	—	231.8
Calcium for de-icing roads .....	—	—	—
Development roads built .....	—	—	—
Off-road parks maintained .....	15	—	—
Roads snowploughed and kept open, King's highways ..	—	—	591.7
Roads snowploughed and kept open, secondary highways ..	—	—	289.9
Roadside picnic places maintained .....	26	—	—
Routine maintenance, King's highway .....	—	—	591.7
Routine maintenance, secondary highways .....	—	—	289.9
Salt for de-icing roads (raw) .....	—	8,600	—
Salt in sand, stockpiled (fine salt) .....	—	918	—
Sand for winter maintenance .....	(yards) 55,900	—	—
Scale houses maintained .....	1	—	—
Seeding by department's forces .....	(acres) 164	—	—
Shrubs received and planted this year .....	43	—	—
Signs erected or replaced .....	2,968	—	—
Snow fence erected, dismantled, stored .....	Rolls (50 feet) 1,032	—	—
Snow hedges planted this year .....	Nil	—	—
Traffic lights installed this year .....	(Railway Crossings) 3	—	—
Weed control .....	(acres) 3,634	—	—
Zone painting on King's highways .....	(gals.) 5,802	—	—
Zone painting on secondary highways .....	(gals.) 1,986	—	—

**DISTRICT No. 19 — FORT WILLIAM****V. A. Snell, P.Eng., District Engineer****CONSTRUCTION**

Construction work progressed at an increased rate in 1967 on roads of varying types, principally arterial roads and Urban Expressways using conventional unit price bids and Department administered and supervised equipment rental type contracts.

Construction expenditure increased by approximately 50% over 1966 from \$6 to \$9 million.

Several arterial highway contracts were under construction in 1967 including work on the Trans-Canada Highway between English River and Ignace and sections of Highway No. 11 between Nipigon and Beardmore.

Various sections of the multimillion dollar Lakehead Expressway were under construction; clearing being completed for almost its entire length; one section was opened for traffic on the most densely travelled portion between Port Arthur and Fort William and another section, eventually to connect Highway No. 61 to Trans-Canada Highway No. 17 was commenced. This latter section of the Expressway includes a substantial structure crossing of the Kaministiquia River. This bridge foundation incorporates some 108 hexagonal prestressed concrete piles greater than 50 feet in length and the unique experience gained in the fabrication and driving of these piles will prove invaluable in future designs of this type.

A 10 mile reconstruction project on 17TCH between Raith and Upsala, for which



Lakehead Expressway at Highway 130. Photo 9701C—(Fort William)



several unacceptable contract bids were received, was constructed by hiring of equipment and supervision and direction of the work by District Construction staff. This project successfully completed, at reasonable cost, was the first of this type in the Department.

#### MAINTENANCE

The Fort William District continued the program of upgrading portions of numerous Secondary Highways, thus providing an improved driving surface and eliminating sharp curves and restricted width sections.

An 8 mile section of Highway 590, south of Highway 17, was surface treated thus providing a more permanent hard surface than prime. In addition, 31 miles of existing hot mix pavement on Highway 11 west of the Lakehead was surface treated.

During the summer season 149 miles of Secondary Highways were primed using 352,000 gallons of prime.

Two garages at Hymers and Savant Lake were started during the year as well as salt sheds at Jackfish and Huronian, thus improving the efficiency of winter maintenance operations.

Routine maintenance was carried out on some 632 miles of King's Highways and 509 miles of Secondary Highways.



Hwy. 17 — MacKenzie River Culvert. Photo 9699B—(Fort William)

Bituminous Hot Mix Pavement

Hwy. No.	LOCATION	MILES COMPL.	YEAR BEGUN	THIS FISCAL YEAR		
				MILES COMPL. PREV. YRS.	MILEAGE COMPL.	TONS PLACED
17TC	23.6 miles west of English River to Ignace .....	6.40	1966	4.70	6.40	15,860
11	Blackwater River in Beardmore south 5.50 miles .....	5.50	1966	3.50	2.00	3,034
LHE	Lakehead Expressway Highway 130 north to Highway 17A .....	2.63	1966	0.30	2.33	19,252 <sup>1</sup>
17TC	10.3 miles east of Port Arthur east limits easterly .....	3.12	1966	0.60	2.52	18,246
11A	9.6 miles east of Sistonen's Corners east & 17A 4.92 miles .....	2.70	1967	Nil	2.70	1,465
11	Junction Highway 17 Nipigon north 8.45 miles .....	5.50	1967	Nil	5.50	11,054
LHE	Highway 61 north for 3.55 miles to the junction of Highways 17 and 11 .....	0.57	1967	Nil	0.57	857
130	McIntyre River Bridge 0.10 miles west of Port Arthur west limits 0.30 .....	0.10	1967	Nil	0.10	94
17TC	11.0 miles west of Raith west for 9.37 miles .....	5.87	1967	Nil	5.87	12,690
17TC	Coldwater Creek Bridge Approach ....	0.05	1967	Nil	0.05	68
TOTALS .....		32.44		9.10	28.04	82,620

Bituminous Prime on Gravel Roads

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS SAND USED
17A	Junction Highways 17 and 11 easterly 9.6 miles .....	10.0	19,300	1,300
585	Junction Highway 17 northerly 24.9 miles .....	25.0	47,200	2,700
587	Junction Highway 17 southerly 26.1 miles .....	26.0	46,950	2,500
588	Junction Highway 590 to junction Highway 593 .....	7.5	31,900	1,075
589	Junction Highway 17A northerly to end of Highway .....	18.5	30,350	2,300
590	Junction Highway 588 northerly 6 miles .....	17.0	35,900	1,590
591	Junction Highway 589 westerly to end .....	5.0	8,650	500
595	Junction Highway 590 to junction 608 .....	12.0	27,200	1,195
599	Junction Highway 17 north to English River Crossing .....	20.0	86,150	3,460
608	Junction Highway 595 southerly .....	0.5	900	45
802	Junction Highway 11 southerly .....	7.5	17,400	675
TOTALS .....		149.0	351,900	17,340

Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
17TC	From Nipigon easterly 32.0 miles (various sections) .....	0.88	2,588
17TC	0.10 miles west of Secondary Highway 628 westerly and Secondary .....		
& 628	Highway 628 (various sections) .....	15.11	35,438
17TC	From 15.7 miles east of Raith to 8.35 miles west of Raith (various sections) .....	—	212
TOTALS .....		15.99	38,238

**Bituminous Surface Treatment**

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BIT. USED	TONS CHIPS USED
11	Junction Highways 11 and 17 west 31 miles .....	31.0	98,125	4,415
590	1 mile south junction Highway 17 south .....	8.0	25,375	1,035
	TOTALS .....	39.0	123,500	5,450

**Bridges Built**

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO	
				TRAFFIC	TYPE OF STRUCTURE
17TC	MacKenzie River .....	1967	1967	July 15 1967	Barrel Arch Culvert

**Crushed Gravel and Stone on Roads by Contract**

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	Blackwater River in Beardmore south 5.50 miles .....	5.50	8,420
11	Junction Highway 17 Nipigon north 8.45 miles .....	8.45	123,670
11	5.5 miles south of Beardmore south .....	—	12,057
17TC	23.6 miles west of English River to Ignace .....	11.10	46,572
17TC	10.3 miles east of Port Arthur east limits east .....	3.12	36,419
17TC	1.8 miles west of Savanne west 1.0 miles east of Upsala .....	—	87,923
17 & 11TC	0.10 miles west of Secondary Highway 628 west 12.9 miles; 13.0 miles west of Secondary Highway 7.95 miles various patches ....	12.90	27,555
17TC	Coldwater Creek Bridge approach .....	0.05	62
11A & 17TC	9.6 miles east of Sistonen's Corner east .....	4.92	60,143
LHE	Highway 130 north to Highway 17A .....	2.63	31,483
LHE	Highway 61 north for 3.5 miles to junction of Highways 17 and 11 .....	0.57	6,342
130	McIntyre River Bridge 0.10 miles west of Port Arthur west limits ..	0.30	905
	TOTALS .....	49.54	441,551

**Crushed Gravel and Stone on Roads by Department's Forces**

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	Longlac to Nipigon .....	118	3,200
11	Shabaqua junction to Atikokan .....	118	2,100
17TC	Port Coldwell to Nipigon .....	125	2,375
17TC	Nipigon to Port Arthur .....	61	600
17TC	Kakabeka to Shabaqua junction .....	23	500
17TC	Shabaqua junction west to Ignace .....	125	1,400
17TC	Shabaquin junction west to Ignace .....	12	108,258
584	Geraldton to Nakina .....	40	3,200
585	Nipigon to Pine Portage .....	22	900
587	Highway 17 to Silver Islet .....	26	1,650
588	Stanley to Round Lake .....	34	5,100
593	Pigeon River to Silver Mountain .....	30	750
599	Ignace to Savant Lake .....	80	5,500
601	Highway 61 to South Gillies .....	12	5,750
622	Atikokan to Caland Ore Mine .....	7	900
	TOTALS .....	833	142,172



## Grading and Culverts

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
11	5.5 miles south of Beardmore south .....	7.30	1967	Nil	2.50
11	Junction Highway 17 Nipigon northerly .....	8.45	1966	Nil	8.45
17TC	23.6 miles west of English River to Ignace .....	11.10	1965	8.50	2.60
17TC	10.3 miles east of Port Arthur City Limits east 3.12 miles .....	3.12	1966	1.10	2.02
17TC	1.8 miles west of Savanne westerly to 1.0 miles east of Upsala .....	11.20	1967	Nil	6.00
11A & 17A	9.6 miles east of Sistonen's Corners easterly 4.92 miles .....	4.92	1966	Nil	0.43
LHE	Highway 130 north to Highway 17A .....	2.63	1966	2.20	0.43
LHE	Highway 17A easterly to Tertiary Road 800 ..	6.85	1967	Nil	5.80
LHE	Junction Highway 61 north to the junction Highway 17 .....	3.55	1967	Nil	0.60
TOTALS .....		59.12		11.80	32.90

## Granular Base on New Grading

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11	Junction Highway 17 Nipigon northerly .....	8.45	1966	Nil	8.45	182,051
11	5.5 miles south of Beardmore southerly .....	7.30	1967	Nil	2.50	33,060
17TC	10.3 miles east of Port Arthur City Limits easterly .....	3.12	1966	1.50	1.62	7,182
17TC	1.80 miles west of Savanne westerly to 1.00 miles east of Upsala .....	11.20	1967	Nil	6.00	172,054
11A & 17A	9.60 miles east of Sistonen's corners easterly .....	4.92	1966	Nil	4.50	167,367
LHE	Junction Highway 130 northerly to Highway 17A .....	2.63	1966	2.20	0.43	25,513
LHE	Junction Highway 17A easterly to Tertiary Road 800 .....	6.85	1967	Nil	5.80	20,168
TOTALS .....		44.47		3.70	29.30	607,395

## New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COM- PLETED
11	Huronian — 42 miles west junc- tion Highways 17TC and 11 ..	Standard Salt Shed	Salt Storage	1967	1967
17TC	Jackfish — 15 miles east Terrace Bay .....	Standard Salt Shed	Salt Storage	1967	1967
588	Hymers Corner—junction High- ways 595 and 588 .....	6-Bay Patrol Garage	Equipment Garage and Patrol Office	1967	Expected late Spring 1968
599	Savant Lake — 1 mile south Highway 599 .....	5 Bay Patrol Garage	Equipment Garage and Patrol Office	1967	Expected late Spring 1968



## Totals of Other Work Done

ITEM	TOTAL NUMBER	TOTAL TONS	TOTAL MILES
Bridges painted .....	6	—	—
Calcium dust layer on gravel roads .....	—	700	—
Calcium for de-icing roads .....	Nil	Nil	—
Development roads built .....	Nil	—	—
Off-road parks maintained .....	19	—	—
Roads snowploughed and kept open, King's highways .....	—	—	632
Roads snowploughed and kept open, secondary highways .....	—	—	509
Roadside picnic places maintained .....	20	—	—
Routine maintenance, King's highways .....	—	—	632
Routine maintenance, secondary highways .....	—	—	509
Salt for de-icing roads (raw) .....	—	7,830	—
Salt in sand, stockpiled .....	—	1,180	—
Sand for winter maintenance .....	—	13,685	—
Scale houses maintained .....	3	—	—
Seeding by department's forces .....	Nil	—	—
Shrubs received and planted this year .....	Nil	—	—
Signs erected or replaced .....	2,066	—	—
Snow fence erected, dismantled, stored .....	—	—	15
Snow hedges planted this year .....	—	—	Nil
Traffic lights installed this year .....	24	—	—
Weed control .....	—	—	952
Zone painting on King's highways .....	(gals.) —	7,325	740
Zone painting on secondary highways .....	(gals.) —	824	90

**DISTRICT No. 20 — KENORA****G. M. Sinclair, P.Eng., District Engineer**

On Highway 11 paving was completed from the Seine River westerly for 38.69 miles in mid-summer. The work of grading, granular base and paving was completed on Highway 11 from Emo to Barwick, a distance of 7.25 miles. The resurfacing of Highway 11 from Emo to Devlin and from the east limits of Fort Frances easterly for 1.89 miles was completed in the late summer. On Highway 71 paving from Nestor Falls southerly for 8.3 miles and grading of a further 9.1 miles commencing 9.0 miles south of Nestor Falls was completed. The reconstruction and paving of Highway 105 was completed by late summer, when the last two contracts for 16 miles of paving and 10 miles of grading and paving from the junction of Highway 17 northerly, were finished.

On Highway 72 grading was completed from the junction of Highway 72 northerly 26 miles and the first course of pavement was placed at the end of the construction season. Grading of a further 11 miles of Highway 72, commencing 26 miles north of the junction of Highway 17, was well advanced at the end of the year and completion is scheduled for 1968.

Structures were erected over the Chukuni River on Highway 125, Vermillion Narrows on Highway 116 and the Pelican River on Highway 72.

**MAINTENANCE**

Highway mileage in Kenora District was increased with the assumption of the



Hwy. 105 — Reconstruction 25 miles north of Hwy. 17. Photo 9767—(Kenora)

remaining 1.2 miles of Secondary Highway 657 to the hamlet of Goldpines, for a total of 3.9 miles.

The Day Labour Forces throughout the District completed grading, drainage and granular base work, totalling approximately 74 miles on Secondary Highways 596, 600, 602, 611, 613, 615, 617, 619 and 642. Bituminous surface treatment was carried out on 66.5 miles of Secondary Highways 594, 603, 621 and Tertiary Road 804 by District Forces.

A standard salt shed was constructed by Day Labour in the vicinity of Willard Lake, 30 miles east of Kenora. Also construction was begun on a 5-day metal patrol garage at Rainy River. Day Labour Forces carried out appreciable seeding and refertilizing operations over Highways 11, 71, 72 and 105. This involved 28 miles of Highways and approximately 270 acres seeded.

Zone painting was completed over 676 centreline miles and 41 edge line miles. weed and brush spraying was carried out over 550 miles at various locations throughout the District. Two automatic signal protection installations were constructed on Secondary Highway 596 near Minaki for two Canadian National Railway crossings. The Department of Highways Crushing Plant operated in various locations of Kenora District throughout last summer and fall producing 151,138 tons of  $\frac{5}{8}$  inch crushed gravel. Our Day Labour forces also carried out bridge repairs as follows: Darlington Bay Bridge, Secondary Highway 596 and Darby Creek Bridge, Secondary Highway 617.

#### Automatic Signals at Railway Crossings

HWY. No.	RY. NAME INITIALS	LOCATION	TYPE OF SIGNAL
596	C.N.R.	Near hamlet of Minaki — mileage 138.82, Reddit Sub-division .....	2 flashing lights and bell
596	C.N.R.	Near hamlet of Minaki — mileage 140.37, Reddit Sub-division .....	2 flashing lights and bell

<sup>1</sup>Level Crossing

#### Bituminous Hot Mix Pavement

HWY. No.	LOCATION	MILES COMPL.	YEAR BEGUN	MILES COMPL. PREV. YRS.	THIS FISCAL YEAR MILEAGE COMPL.	TONS PLACED
11	From 34.06 miles west of the Atikokan Cut Off westerly for 38.69 miles .....	38.69	1966	15.00	23.69	39,085
11	Nickel Lake Patrol Yard, Township of Watten, Concession three, lot num- ber five .....	—	1967	—	—	629
11	From junction with Highway 602 wes- terly to Barwick and paving at Pine- wood River Bridge and Approaches 16.5 miles west of Barwick .....	7.71	1966	4.60	3.11	4,225
71	From Nestor Falls Southerly including part of old Highway 71, Govern- ment Dock Road and 1.4 miles of the Caliper Lake Park Road .....	10.85	1966	—	10.85	16,974
72	From junction with Highway 17 North- erly 25.84 miles including the Dinor- wic Patrol Yard east of junction of Highways 17 and 72 .....	25.84	1967	—	25.84	12,324 (Sand Pad)



105	From junction with Highway 17 North- erly 16.19 miles including Redvers Patrol Yard 10.1 miles north and Ely Lake Patrol Yard 3.1 miles west of junction of Highways 17 and 105 ....	16.49	1966	—	16.49	21,089
105	From 16.16 miles north of junction with Highway 17 northerly 9.55 miles .....	9.55	1967	—	9.55	18,051
TOTALS .....		109.13		19.60	89.53	112,377

Bituminous Mulch and Cold Mix

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES	TONS PLACED
Various	Stockpiling and mixing throughout the District for mulch patching	...	2,089

Bituminous Resurfacing of Old Pavement

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	Town of Fort Frances, Colonization Road West from Third Street to Wright Avenue (Connecting Link Agreement) .....	0.50	950
11	(Part "A") Emo to Devlin .....	6.84	19,024
	(Part "B") Fort Frances East Limits Easterly 1.89 miles plus Canadian National Railways crossing 4.4 miles East of East Junction with Highway 71 .....	1.89	5,235
17TC	Keewatin Bridge to Parsons Street West Branch Winnipeg River Bridge to Birchwood Terrace .....	1.50	5,132
	Hospital Bridge to Main Street North, Main Street South to Eighth Avenue South and Second Street South to Fifth Street South. (Connecting Link Agreement) .....	—	—
TOTALS .....		10.73	30,341



Hwy. 11 — West of Atikokan. Photo 9683—(Kenora)



### Bituminous Surface Treatment

Hwy. No.	LOCATION	MILES COMPL.	THIS FISCAL YEAR	
			GALLONS BITUMULS USED	TONS CHIP USE
594	Dryden westerly to junction with Highway 17 (TC) .....	17.50	52,785	2,82
603	Junction with Highway 17 (TC) northerly to Dinorwic .....	3.00	9,300	54
621	Junction with Highway 11 northerly to end of road .....	33.00	126,300	7,11
804	Junction with Highway 105 northwesterly to the Mani- tou Falls Dam .....	13.00	44,550	2,66
TOTALS .....		66.50	232,935	13,22

### Bridges Built

Hwy. No.	LOCATION	YEAR BEGUN	YEAR COMPL.	OPENED TO TRAFFIC	TYPE OF STRUCTURE
72	Pelican River Bridge, in the Town of Sioux Lookout (Wellington Street) .....	1967	1967	1967	Timber Piles and Concrete Rigid frame reinforced concrete floor
116	Vermillion Narrows Bridge, 6.1 miles west of junction with Highway 72 .....	1967	1967	1967	Structural Steel Girder reinforced concrete floor
125	Chukuni River Bridge, 2.5 miles north of junction with Highway 105 .....	1967	1967	1967	Structural Steel Girder reinforced concrete floor

<sup>1</sup>Total length 236 feet, width 28 feet, clearance — open. 15 spans — 2 of 13 feet 3 inches, 13 of 16 feet.

<sup>2</sup>Total length 40 feet width 28 feet, clearance — open. 1 span of 40 feet.

<sup>3</sup>Total length 283 feet, width 28 feet, clearance — open. 3 spans — 2 of 80 feet, 1 of 120 feet.

### Crushed Gravel and Stone on Roads by Contract

Hwy. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	From junction with Highway 602 westerly to Barwick and paving at the Pinewood River Bridge and approaches 16.5 miles west of Barwick .....	0.46	5,136
11	From 34.06 miles west of Atikokan "Cut Off" westerly for 38.69 miles .....	32.69	37,042
11	Emo to Devlin (Part "A") Fort Frances east limits .....	6.84	55,502
	(Part "B") easterly 1.89 miles plus Canadian National Railways Crossing 4.4 miles east of east junction with Highway 71 .....	1.89	13,321
71	From 9.0 miles south of Nestor Falls southerly for 9.10 miles .....	9.10	109,784
71	From Nestor Falls southerly 9.05 miles including 0.30 miles of old Highway 71, 0.10 miles of Government Dock Road at Nestor Falls and 1.40 miles of the road to Caliper Lake Park .....	10.85	30,204
72	From 12.0 miles north of junction with Highway 17 northerly for 13.0 miles .....	5.00	101,053
72	Pelican River Bridge in the Town of Sioux Lookout (Approaches) .....	0.10	3,781
72	From junction with Highway 116 southerly for 11.22 miles .....	8.00	36,388
105	From 16.16 miles north of junction with Highway 17 northerly for 9.55 miles .....	3.15	114,962
105	Junction of Highways 17 and 105 northerly 16.19 miles including Redvers Patrol Yard 10.1 miles north of Highway 17 and Ely Lake Patrol Yard 3.1 miles west of junction with Highway 17 ....	16.49	27,870

116	Vermilion Narrows Bridge 6.1 miles west of junction with Highway 72 (Approaches) .....	0.68	6,211
125	Chukuni River Bridge 2.5 miles north of junction with Highway 105 (Approaches) .....	0.66	10,462
	TOTALS .....	95.91	551,716

### Crushed Gravel and Stone on Roads by Department's Forces

HWY. No.	LOCATION	THIS FISCAL YEAR	
		MILES COMPL.	TONS PLACED
11	Rainy River easterly to Seine River Bridge (116.70 miles) .....	sections	4,982
17TC	Ontario-Manitoba Boundary to west limits of Ignace (184.80 miles) .....	sections	4,502
71	Junction with Highway 17 at "Longbow Corners" southerly to junction with Highway 11 (96.60 miles) .....	sections	2,513
72	Junction with Highway 17 near Dinorwic northerly to Sioux Lookout (43 miles) .....	sections	468
105	Junction with Highway 17 at Vermilion Bay northerly to Red Lake (108.90 miles) .....	sections	1,871
116	From junction with Highway 72 at "Patricia Corners" westerly to Hudson (10 miles) .....	sections	384
119	From junction with Highway 17 northerly to Richan (13 miles) ....	sections	1,446
125	From junction with Highway 105 northerly to Cochenour (8.50 miles) .....	sections	204
128	Kenora north limits northerly to Reddit (17.80 miles) .....	sections	9,818
	(stockpile) .....		11,475
SECONDARY HIGHWAYS			
594	From junction with Highway 17 easterly to Dryden (21.50 miles) .....	sections	354
596	Keewatin north limits north-westerly to Minaki (29.60 miles) .....	sections	6,923
	(stockpile) .....		6,276
598	Junction with Highway 128 easterly to junction with Highway 604 (2.80 miles) .....	2.80	57
600	From Rainy River north-easterly to junction with Highway 71 (59 miles) .....	sections	6,861
	(stockpile) .....		20,617
601	Junction with Highway 17 (East Leg) to junction with Highway 17 (West Leg) (16.10 miles) .....	sections	158
602	Junction with Highway 613 to Emo (14.20 miles) .....	sections	222
603	From junction with Highway 17 at Borups Corners northerly to Dymont (2.80 miles) .....	2.80	23
604	Kenora (East Limits) north-easterly to the Kenora Airport (5.20 miles) .....	sections	44
609	Junction with Highway 17 northerly to Clay Lake (9.80 miles) ....	sections	69
611	Junction with Highway 602 northerly to end of Road (12.50 miles) (stockpile) .....	sections	8,484
	(stockpile) .....		12,994
613	Junction with Highway 11 northerly to Lake Despair and south to junction with Highway 602 (25.50 miles) .....	sections	3,114
	(stockpile) .....		11,617
615	Junction with Highway 17 north-easterly to Clearwater Lake (12.50 miles) .....	sections	6,646
	(stockpile) .....		6,282
617	From junction with Highway 11 at Stratton to junction with Highway 600 (14.40 miles) .....	sections	11,006
	(stockpile) .....		10,090
618	From junction with Highway 105 to the Starratt Olson Mine site (7.20 miles) .....	sections	32
619	From junction with Highway 11 northerly to junction with High- way 621 (25.5 miles) .....	sections	45
	(stockpile) .....		10,824
621	From Sleeman (Highway 11) northerly to Morson and Lake of the Woods (40.15 miles) .....	sections	10,298

641	Junction with Highway 17 northerly to junction with Highway 596	sections	2,225
642	From First Street in Sioux Lookout easterly to Alcona (11.50 miles)	sections	48
647	Junction with Highway 17 north-westerly to Blue Lake Park (5.30 miles)	sections	6
657	From junction with Highway 105 at Ear Falls easterly to Gold-pines (3.70 miles)	3.70	366
659	From junction with Highway 604 north-westerly to Highway 128 (11.30 miles)	sections	123
	TERTIARY ROAD (stockpile)		2,230
804	Junction with Highway 105 westerly to the Manitou Falls Dam (13.20 miles)	sections	278
TOTALS		9.30	175,975

### Grading and Culverts

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	MILES COMPL. THIS YEAR
11	From junction with Highway 602 westerly to Barwick and Paving at the Pinewood River Bridge and Approaches 16.5 miles west of Barwick	7.71	1965	7.25	0.46
71	From 9.0 miles south of Nestor Falls southerly for 9.10 miles	9.10	1966	Nil	9.10
72	From 12.0 miles north of junction with Highway 17 northerly for 13.0 miles	13.00	1966	8.00	5.00
72	Pelican River Bridge in the Town of Sioux Lookout (Approaches)	0.10	1967	Nil	0.10
72	From junction with Highway 116 southerly for 11.22 miles	11.22	1967	Nil	8.00
105	From 16.16 miles north of junction with Highway 17 northerly for 9.55 miles	9.55	1965	6.40	3.15
105	Junction of Highways 17 and 105 northerly 16.19 miles including Redvers Patrol Yard 10.1 miles north of Highway 17 and Ely Lake Patrol Yard 3.1 miles west of junction with Highway 17 (16.49 miles). NOTE: 16.19 — Paving, .30 — Grading)	16.49	1967	Nil	0.30
116	Vermillion Narrows Bridge 6.1 miles west of junction with Highway 72 (Approaches)	0.68	1967	Nil	0.68
125	Chukuni River Bridge 2.5 miles north of junction with Highway 105	0.66	1967	Nil	0.66
TOTALS		68.51		21.65	27.45

### Granular Base on New Grading

HWY. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11	From junction with Highway 602 westerly to Barwick and paving at the Pinewood River Bridge and Approaches 16.5 miles west of Barwick	7.71	1965	7.25	0.46	6,343
11	From 34.06 miles west of the Atikokan "Cut Off" westerly for 38.69 miles	38.69	1966	6.00	32.69	289

71	From 9.0 miles south of Nestor Falls southerly for 9.10 miles .....	9.10	1966	Nil	9.10	342,782
71	From Nestor Falls southerly 9.05 miles including 0.30 miles of old Highway 71, 0.10 miles of the Government Dock Road at Nestor Falls and 1.40 miles of the road to Caliper Lake Park .....	10.85	1966	Nil	10.85	8,569
72	From 12.0 miles north of junction with Highway 17 northerly for 13.0 miles .....	13.00	1966	8.00	5.00	141,833
72	Pelican River Bridge in the Town of Sioux Lookout (Approaches) .....	0.10	1967	Nil	0.10	9,315
72	From junction with Highway 116 southerly for 11.22 miles .....	11.22	1967	Nil	8.00	235,533
105	From 16.16 miles north of junction with Highway 17 northerly for 9.55 miles .....	9.55	1965	6.40	3.15	162,486
105	Junction of Highways 17 and 105 northerly 16.19 miles including Redvers Patrol Yard 10.1 miles north of Highway 17 and Ely Lake Patrol Yard 3.1 miles west of junction with Highway 17 (16.49 miles) .....	16.49	1967	Nil	16.49	6,727
116	Vermillion Narrows Bridge 6.1 miles west of junction with Highway 72 Approaches) .....	0.68	1967	Nil	0.68	17,732
125	Chukuni River Bridge 2.5 miles north of junction with Highway 105 (Approaches) .....	0.66	1967	Nil	0.66	10,810
TOTALS .....		118.05		27.65	87.18	942,419

Granular Base Where No Grading Done

Hwy. No.	LOCATION	MILES IN JOB	YEAR BEGUN	MILES COMPL. PREVIOUS YEARS	THIS FISCAL YEAR MILES COMPL.	TONS PLACED
11	Emo to Devlin (Part "A") Fort Frances East Limits .....	6.85			6.84	Nil
	(Part "B") Easterly 1.89 miles plus Revision of Canadian National Railway Crossing 4.4 miles east of East Junction with Highway 71 .....	1.89	1967	Nil	1.89	18,369
—	Whitedog, Caribou Falls Road northerly from junction with Highway 596 for 34 miles to Caribou Falls .....	34.00	1967	Nil	16.00	112,329
596	Keewatin (North-East Limits) north-westerly to junction with Highway 641 .....	8.50	1966	7.40	1.10	8,532
601	6.5 miles north of junction with Highway 17 to 7.0 miles north ....	0.50	1966	Nil	0.50	501
602	3.0 miles east of Big Fork westerly for 5.0 miles .....	5.00	1965	4.50	0.50	2,855
602	7 miles south of Emo to 4 miles south .....	3.00	1966	2.50	0.50	1,843
602	3 miles south of Emo to 6 miles south .....	3.00	1967	Nil	3.00	2,916



611	0.5 miles north of junction with Highway 602 (Culvert Replacement) .....	—	1967	Nil	Nil	615
611	From junction with Highway 602 northwesterly to end of road .....	13.90	1966	Nil	13.90	5,721
613	9 miles north of junction with Highway 11 to 13 miles north .....	4.00	1967	Nil	4.00	39,272
619	Lots 6 and 7 Concessions 3 and 4 (Culvert Replacement) .....	—	1966	Nil	Nil	3,020
	Totals .....	80.63		14.40	48.23	195,973

### New Buildings

Hwy. No.	LOCATION	TYPE OF BUILDING	PURPOSE OF BUILDING	YEAR BEGUN	COMPLETED
11	Department of Highways Patrol Yard in the village of Rainy River .....	Five Bay Metal Patrol Garage	Equipment Storage and Garage	1967	1968
17TC	Williard Lake Patrol Yard approximately thirty miles east of Kenora .....	Standard Salt Shed (120 A)	Salt Storage	1967	1967

### Totals of Other Work Done

ITEM	NUMBER	TONS	MILES
Bridges painted .....	Nil	—	—
Calcium dust layer on Gravel Roads .....	—	1,424	—
Calcium for de-icing roads .....	—	8	—
Development roads built Worthington 874 .....	1	—	4.00
Off-road parks maintained .....	24	—	—
Roads snowploughed and kept open, King's highways .....	9	—	604.60
Roads snowploughed and kept open, secondary highways .....	23	—	372.10
Roadside picnic places maintained .....	7	—	—
Routine maintenance, King's highways .....	9	—	604.60
Routine maintenance, secondary highways .....	23	—	372.10
Salt for de-icing roads (raw) .....	—	3,886	—
Salt in sand, stockpiled .....	—	1,340	—
Sand for winter maintenance .....	—	24,021	—
Scale houses maintained .....	5	—	—
Seeding by department's forces .....	(acres) 140	—	—
Shrubs received and planted this year .....	(Flowering Crabs) 8	—	—
	(Lilacs) 12	—	—
Signs erected or replaced .....	1,211	—	—
Snow fence erected, dismantled, stored .....	—	—	16.96
Snow hedges planted this year .....	Nil	—	Nil
Traffic lights installed this year .....	Nil	—	—
Weed control .....	Weed Killer two 4D (gallons) 707	—	—
	Sodium TCA (pounds) 3,900	—	550.00
Zone painting on King's highways .....	(gals.) —	8,266	669.30
Zone painting on secondary highways .....	(gals.) —	125	7.20

## **PERSONNEL BRANCH**

**JAMES POGUE, Director**

The Personnel Branch administers recruitment and placement of staff, staff transfers and promotions, training, organization and classification, personnel records, staff establishment of branches, the departmental safety program and the Public Service Superannuation Act. It is the branch responsible for the administration of the Public Service Act and Regulations, within the Department.

The branch publishes a personnel manual, supplied to the supervisor of each major unit of organization, containing information on both Department of Civil Service and Department of Highways procedures. An accompanying manual, also published by the Personnel Branch, contains all published class specifications utilized by the Department.

These publications are augmented as the need arises by circulars, published over the signature of the Deputy Minister, detailing such matters as new salary rates, changes in personnel procedure or policies and other matters of related supervisory and employee interest. These circulars are widely distributed to both major and minor organizational units for display on bulletin boards, so that employees may be made aware of all new developments as soon as possible.

All employee grievances made under the Public Service Grievance Procedure are reported by supervisors to the Personnel Branch, to ensure that prompt action may be taken where necessary.

Should the grievance reach the stage of a hearing before the Public Service Grievance Board or before the Classification Rating Committee designated by the Chairman of the Civil Service Commission, the departmental viewpoint is presented by a member of the Personnel Branch staff.

## **RECRUITMENT SECTION**

During the early months of this year, competition for technically qualified and professional staff remained keen. However, a reduction in employment opportunity appeared to occur during the last half of the year facilitating recruitment in these areas. Because of this slackening in employment opportunity and some lay-offs in allied work areas, it has been possible to recruit on a more highly selective basis than has been possible over the last several years. No real difficulty was experienced during this year in employment for entry level positions.

In total, 1,250 new employees were appointed to the Probationary Staff, of which 546 were hired through Head Office and 704 through the eighteen District Offices.

Students employed for the summer of 1967 totalled 814, of which 137 were Civil Engineering undergraduates who were involved in our undergraduate Civil Engineering training program.

In view of the predicted downtrend in opportunity for Civil Engineers graduating

in 1968, it was considered unnecessary to recruit abroad and all efforts were concentrated on recruitment of graduates from among those third year students employed during the summer of 1967. Twenty 1968 graduates have been hired from Canadian Universities to commence their employment on graduation in May 1968 and of these 20, twelve had been employed as undergraduates during the summer of 1967.

## RECORDS SECTION

This section has the responsibility for the documentation, recording and filing of all employee transactions, ensuring that prescribed procedures are followed.

All Leaves of Absence as provided for in The Public Service Act are processed in this section and enquiries concerning attendance and vacation credits are also referred here. Terminations, superannuations and retirements, recommendations for disability benefits are also processed. Enquiries concerning benefits under The Public Service Superannuation Act are directed here as are questions concerning Employees' Group Insurance Plan. Each year a list is prepared of employees reaching their 20-year anniversary for vacation purposes and their Quarter-Century anniversary dates.

The section is also responsible for maintaining employee anniversary merit increase dates, from which eligibility for merit increases for all employees of the Department is determined. In addition to being responsible for maintaining these records on punched cards, this section prepares Merit Increase lists for certification by the Deputy Minister, authorizing salary increases. It is also required to prepare lists for signature by the Deputy Minister for salary increases occasioned by Salary Schedule Amendments which have been authorized by Order-in-Council and published by the Department of Civil Service. It is responsible for the distribution and posting of class and salary changes which have been delegated to the Deputy Minister.

A report is prepared quarterly showing the numbers and the amounts of the accelerated merit increases granted by the Deputy Minister to members of this Department which is submitted to the Secretary of the Treasury Board by the Deputy Minister. At the end of each fiscal year a Recommendation to Council is prepared showing the total numbers and amounts of the accelerated merit increases granted during the year, to be presented by the Minister to the Lieutenant-Governor in Council.

At the end of each quarter a report is forwarded to the Department of Civil Service showing the number and the annual salaries of employees on the Unclassified Staff, Group 1.

A strength report is prepared monthly showing the present staff in relation to the previous year. The position inventory for the entire Department is maintained by this section, being documented on the personnel files and on punched cards. This amounted to approximately 14,895 transactions in addition to those mentioned below. A skills inventory for employees in certain classifications is maintained by this section.

At the end of the fiscal year the Department's work force was 12,799 which was distributed as follows:

	1967-68	1966-67	1965-66
Administration Branch .....	241	238	213
Financial Branch .....	317	308	307
Services Branch .....	1,228	1,225	1,188
Planning Branch .....	450	403	370
Design Branch .....	788	750	733
Operations Branch .....	9,547	10,161	10,363
Personnel Branch .....	52	52	62
Legal Branch .....	30	27	24
Electronic Computing Branch .....	123	108	91
Research Branch .....	23	18	13
<b>TOTALS</b> .....	<b>12,799</b>	<b>13,290</b>	<b>13,364</b>

The total work force of 12,799 included salaried and hourly-rated personnel and is grouped as follows:

	1967-68	1966-67	1965-66
Regular and Probationary Staff .....	10,543	9,760	9,116
Unclassified Staff .....	164	747	1,034
Seasonal Unclassified Staff .....	2,092	2,783	3,214
<b>TOTALS</b> .....	<b>12,799</b>	<b>13,290</b>	<b>13,364</b>

By occupation the employees are grouped as follows:

	1967-68	1966-67	1965-66
Clerical and Stenographers .....	2,144	2,131	2,148
Graduate Engineers .....	410	404	350
Engineering Technicians .....	1,991	1,902	2,346
Draftsmen .....	674	657	618
Others .....	1,417	1,385	1,385
Equipment Operators .....	1,884	1,800	2,782
Automotive Mechanics and Foremen .....	512	429	458
Skilled Labour .....	470	553	631
Unskilled Labour .....	1,205	1,246	2,646
Contract Staff (not recorded by I.B.M.) .....	2,092	2,783	—
<b>TOTALS</b> .....	<b>12,799</b>	<b>13,290</b>	<b>13,364</b>

During the year 17,768 personnel transactions were carried out by the Personnel Branch as follows:

New Appointments .....	1,339
Terminations .....	1,139
*Salary and Other Changes .....	15,290

\*This figure includes general salary revisions to some classes used by the Department.

## ORGANIZATION AND CLASSIFICATION SECTION

This section is responsible for the administration, throughout the Department, of the classification and salary plan established by the Department of Civil Service. It is responsible for the development and administration of a similar departmental program governing the unclassified employees.

It is also responsible for the program of appointments to the regular staff of



probationary and unclassified employees. In this connection, 520 employees were transferred from the continuous unclassified staff to the classified service and 1,058 probationary employees were appointed to regular staff during the period under review.

The section also provides, through its regional and branch representatives, advice and guidance to both supervisors and employees on a wide range of matters, such as interpretation of The Public Service Act and Regulations and the provision of counselling to individual employees where their problems are of such a nature that their supervisors are unable to assist them.

The program initiated under the Ontario Civil Service Reclassification Plan was continued, and the branch and regional personnel representatives continued to provide advice and guidance to supervisors in the field of position specification writing. The usual organizational changes, which occur in a department of this size, necessitated the review and re-writing of many position specifications and the re-drawing of a number of organization charts.

As in previous years, the personnel representatives also conducted desk audits of a number of positions, where the responsible supervisor or the incumbent of the position had expressed doubts concerning the correctness of the class to which the position had been assigned, in order to ensure that a factual description had been submitted to the Department of Civil Service for classification allocation.

Several new classifications were recommended to the Civil Service Commission and established, such as Weighman, Powderman, Marine Engineer 2, Senior Marine Engineer 2, Radio Operator D.H.O., Retoucher and Research Officer D.H.O. series. Other class series were re-structured upon recommendation of this section to the Civil Service Commission, including Technicians, Photographic and Technicians, Engineering Audit. These changes necessitated the reclassification of a number of employees and their positions, with appropriate salary adjustments.

New salary ranges established by a special arbitration award resulted in the processing of a salary revision for over 700 Drafting and Technical employees.

Other re-organization within the Department brought the usual new or revised position specifications and organization charts in its train, necessitating the allocation or re-allocation of numerous positions to appropriate classes. Four hundred and ninety-two (492) class allocations were processed during the period under review.

The usual large volume of merit increases in salary, promotions, demotions and other related transactions were processed.

A supervisory training program was introduced and carried to supervisors in all Districts by supervisors from the Organization and Classification and Safety Sections. The course was conducted in conjunction with the Department of Civil Service.

## **TRAINING SECTION**

This section is responsible for establishing and administering a program of training to maintain and improve the efficiency of Department operations.

Training courses were held at the Training Centre at Downsview during the fall and winter months when reduced field activities enabled employees to attend.

BRANCH	NUMBER OF COURSES		NUMBER OF CANDIDATES	
	1966-67	1967-68	1966-67	1967-68
Services .....	10	10	151	146
Operations .....	23	21	556	543
Planning .....	2	8	8	106
Design .....	14	10	151	89
Administration .....	0	3	0	12
Personnel .....	5	12	39	253
TOTALS .....	54	64	905	1,149

These courses provided instruction in a wide variety of Department activities such as: engineering surveying, land surveying, construction surveying, drafting, estimating, quality control, shorthand, supervision and management. Eighty-two per cent of the candidates writing examinations in connection with these courses were successful.

In addition to courses, qualifying examinations were conducted as follows:

BRANCH	NUMBER OF EXAMINATIONS		NUMBER OF CANDIDATES	
	1966-67	1967-68	1966-67	1967-68
Services .....	11	11	194	204
Operations .....	9	11	496	393
Design .....	2	4	42	45
TOTALS .....	22	26	732	642

These examinations were written by employees to qualify for promotion to a variety of classifications, such as: Mechanic 2, Draftsman 1 and 2, Technician 2, Survey, Highway Inspection Assistant 2, Landscape Crewman, Sign Painter Improver and Sign Painter Journeyman, and Clerks 5, 6 and 8, Supply. Sixty-five per cent of the candidates were successful.

In addition to technical job training, a regular program of safety instruction is conducted by the Personnel Branch Safety Section. A total of 4,259 employees received safety instruction. In addition, safety lectures were included in many of the technical courses.

The Department conducted five courses for employees from the Municipalities throughout the Province. Four of these were inspection courses and the fifth was a surveying course. One hundred and fifty-nine municipal employees attended.

Two hundred and seventy-two employees were assisted either financially or through the granting of leaves of absence to attend courses conducted by outside agencies. This type of training is approved when it is not feasible to provide the training by in-service means and it is considered essential or beneficial to the Department's operations that specific employees should acquire special skills or knowledge.

Three hundred and thirty-two employees took St. John Ambulance courses in the fundamentals of first aid and qualified for certificates.

A total of 6,654 employees participated in the various training activities conducted from April 1, 1967 to March 31, 1968.

## DEPARTMENTAL COUNCIL SYSTEM

The Departmental Council convened for ten meetings in the period from April 1, 1967 to March 31, 1968. Two of these Meetings were held at Regional locations, i.e. North Bay and Kingston. These Regional Meetings bring together not only the Departmental Council members but two representatives from each Branch Council and senior personnel from the Districts and Regional Offices located within the framework of the Region.

A two-day Conference was held in May of 1967 with the Chairmen, or delegates, from the twenty-eight (28) Branch Councils in attendance. At this Council Conference many matters were reviewed, such as government regulations and policies, salary ranges, classifications, etc. The delegates took a very active part in the Conference by the presentation of problems pertinent to their work location. Speakers from other Departments of the Government were invited and discussions on pensions, safety, personnel matters, etc., took place.

The annual election of employee representatives to the Departmental and Branch Councils was conducted in accordance with the regulations made pursuant to The Public Service Act. The Minister selected and appointed his representatives to the Councils.

The continued interest shown by the Minister, Deputy Minister, Branch Heads and District Engineers in the Council System has made its operation well worth while.

## SAFETY SECTION

The Safety Section, through the Director of Personnel, is responsible for the provision of safety training and accident prevention material to Department employees.

In a programme designed to further improve the Department's safety record, the policy of visiting Districts or Branches twice per year was continued. The policy of conducting more frequent meetings of shorter duration was continued because of its success in the previous fiscal year.

During the period under review, the Safety Section undertook a complete survey of fire protection, fire evacuation procedures and alarm systems in all Department buildings outside the Metropolitan Toronto area. A special course on fire prevention and control has been developed and training which will include all classes of employees was inaugurated during this period.

Approximately 4,620 employees received accident prevention instruction. This figure includes meetings in the various Branches and Districts, as well as lectures at the training centre at Downsview.

Amongst those receiving safety instruction were patrolmen, foremen, mechanics, equipment instructors, manual workers, equipment operators, survey inspection and other construction personnel as well as other groups of the regional and district staffs.

The programme of production and distribution of safety posters designed within the Department was continued, many of these being directed towards the elimination of accidents which experience had indicated would occur on a seasonal basis. Articles were also prepared for publication in the "D.H.O. News," the departmental employee publication.



In addition to the normal safety training provided to employees, a two-day course in the "Fundamentals of First Aid" was provided to 332 employees by the St. John Ambulance. This is an increase of 80 over the previous year. Those qualifying received certificates of proficiency.

The usual annual Safe and Skilled Driving Competitions (Rodeo) were held with all Districts participating, with prizes being awarded at a function held at the completion of the Rodeo.

1,686 equipment operators entered in the Ontario Safety League Safe Driver Award Programme received awards for the calendar year 1967, indicating a continuing improvement in safety consciousness on the part of our operators, the number of awards having risen from 741 in 1955.

The following tables summarize the Department's industrial and motor vehicle accident experience:

*Motor Vehicle Accidents*

	FISCAL YEAR 1966-67	FISCAL YEAR 1967-68
Responsible motor vehicle accidents .....	154	158
Miles travelled .....	38,163,103	38,373,046
Frequency rate per 100,000 miles of travel .....	0.40	0.41
Responsible hourly rated equipment accidents .....	17	29
Miles travelled .....	2,793,980	2,518,460
Frequency rate per 100,000 miles of travel .....	0.61	1.15
Total responsible accidents for both types of equipment .....	171	187
Total not responsible accidents for both types of equipment .....	280	340

*Industrial Accidents*

	FISCAL YEAR 1966-67	FISCAL YEAR 1967-68
Total hours worked .....	25,605,893	27,131,096
Number of lost time accidents .....	503	478
Days lost as result of accidents .....	50,002	33,111
Frequency rate .....	19.64	17.62
Severity rate .....	1,952.75	1,220.40
Industrial injury costs .....	\$409,690.53	\$417,588.22

*1967 Deaths:*

- One man died in tunnel — asphyxiation.
- One man struck on road.
- One man suffered a heart attack while rolling up snow fence.

*1967 Amputations:*

- Four men had the first joint of a finger severed.



## PLANNING BRANCH

W. Bidell, P.Eng., Director of Planning

### TRAFFIC AND PLANNING STUDIES DIVISION

#### PLANNING STUDIES SECTION

The work carried out by the Planning Studies Section has been expanded during the past fiscal year to keep pace with the growing demands for comprehensive transportation planning embodying all modes of travel plus its integration with development programs for metropolitan areas of the Province. The work carried out within the section may be categorized as follows:—

- (a) Traffic Planning
- (b) Area Highway Planning
- (c) Urban Transportation Planning

#### (A) TRAFFIC PLANNING

One of the major activities of this group is to provide the traffic data necessary for the design of highway facilities. During the past fiscal year the number of projects completed is as follows:—

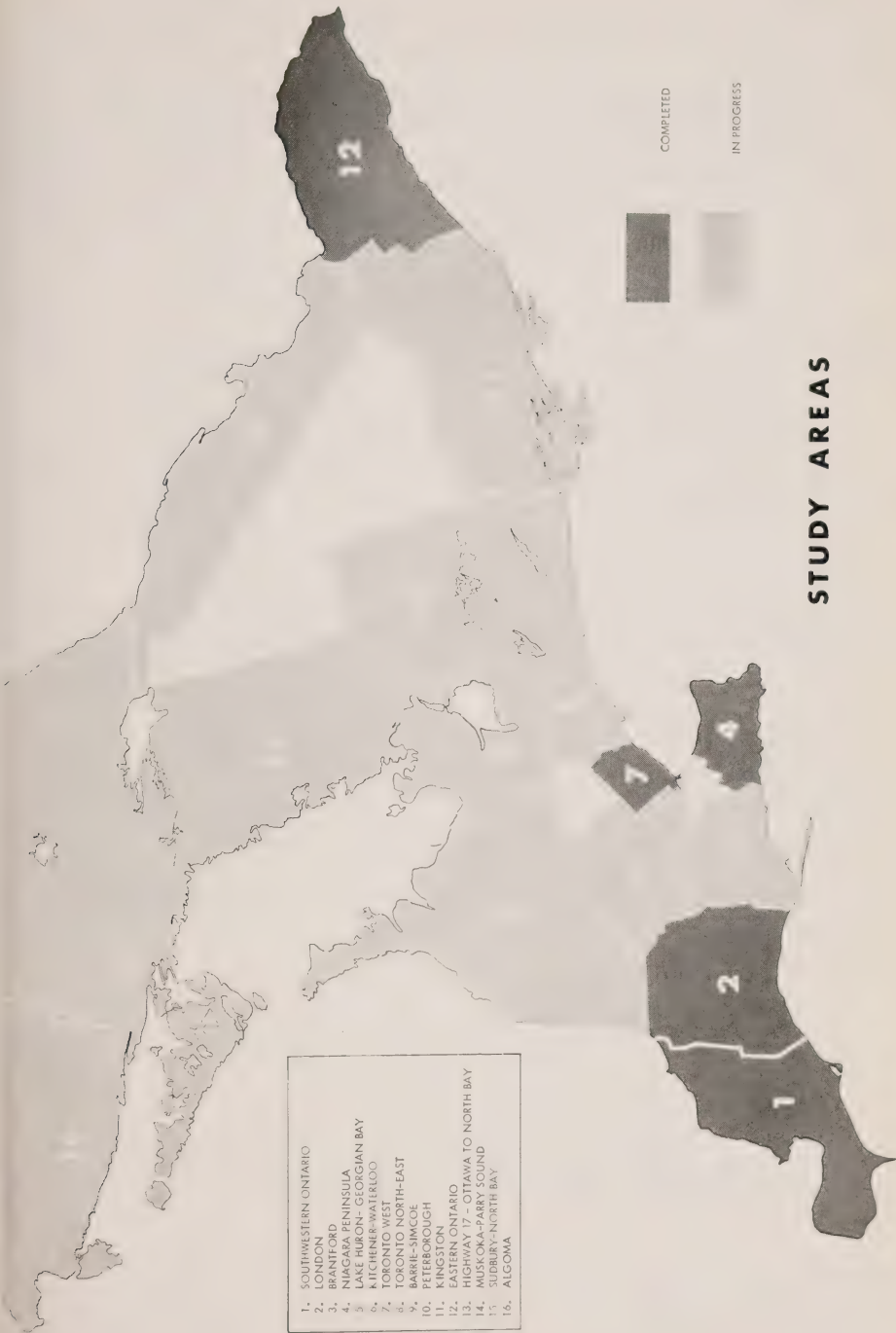
NUMBER OF PROJECTS COMPLETED	REGION
57	Central
28	S.W.
22	Eastern
20	Northern
<hr/> TOTAL 127	

In addition, 84 projects were carried over into the next fiscal year. Special studies undertaken by the group are as follows:—

- (a) A short term analysis of the demand for commuter rail service in a number of corridors emanating out of Metro Toronto.
- (b) A continuation of work on the development of a mathematical model to explain travel patterns in the Metro Toronto Region.
- (c) The development of specifications for a new battery of transportation Planning Programs to be written jointly by the Department and A. M. Voorhees & Assoc. Inc., during the coming fiscal year.
- (d) Exploratory work on the development of weekend traffic models to describe recreational travel.
- (e) A review of an express bus concept as an alternative to rail commuter service.

#### (B) AREA HIGHWAY PLANNING

Work is continuing on the program of Area Highway Planning, which is directed towards the establishment of highway needs for a twenty year planning period. During the past fiscal year no new studies were released, however, three studies had progressed to the point that their release was dependent only on the arrangement of a suitable time for a public meeting. These studies are the Brantford Area Highway



Planning Study, the Highway 17 — Ottawa to North Bay Study and the Kingston Area Highway Planning Study. Their release will bring to 8 the number of completed studies. Reports are now available for Niagara Peninsula Planning Study, London Area Planning Study, Eastern Ontario Planning Study and South Western Ontario Planning Study.

In addition to those noted above, the following 8 studies are in progress:—

1. *Barrie-Simcoe County Highway Study*

This study is in the final stages. Highway systems have been developed and tested and are now under active review by the Department.

2. *Peterborough Area Highway Planning Study*

This study is approaching the final stages. The development and testing of alternate road networks is currently in progress.

3. *Lake Huron-Georgian Bay Area Highway Planning Study*

The analysis of the travel forecasts is now complete. The development of road systems for testing will begin shortly.

4. *Muskoka-Parry Sound Area Highway Planning Study*

The development of a new computer technique for the analysis of screen line surveys accelerated the analysis of the data for this study. The forecasting of travel to the future is basically complete.

5. *Sudbury-North Bay Area Highway Planning Study*

The collection of data for this study is complete and the processing and analysis of the base data is underway.

6. *Toronto Area Highway Study — North East*

This study is essentially completed, however release of the results must be delayed until recommendations relating to other planning projects in the Toronto Area are complete.

7. *Algoma Area Highway Planning Study*

The preliminary planning for this study is complete and data collection will begin this summer.

8. *Thunder Bay Area Highway Planning Study*

The preliminary planning for this study is complete and data collection will begin this summer.

9. *Kitchener Area Highway Planning Study*

This study forms a part of a much larger comprehensive planning study. Work is progressing on the development of a mathematical simulation model for the area as well as the supporting economic base and land use studies essential for the forecasting of development and travel.

Location of the completed study areas as well as those studies in progress are shown on Plate I.

### (C) URBAN TRANSPORTATION PLANNING

The Planning Studies Section provides technical assistance and guidance to the urban municipalities in the Province that have retained consultants to undertake urban and regional transportation studies. The following table shows the urban studies completed during this fiscal year as well as those currently in progress.

#### URBAN TRANSPORTATION STUDIES FOR FISCAL YEAR 1967-1968

COMPLETED	IN PROGRESS
Guelph	Arnprior
Wasaga Beach	Pembroke
St. Catharines (Glendale)	Renfrew
London (Feasibility)	Peterborough
Chatham	Collingwood
Georgetown	North Bay
Hawkesbury	Lakehead
Port Colborne	Timmins
St. Thomas	Dundas
Kenora	

The purpose of these studies is to identify transportation requirements with respect to road, bus, parking, preliminary design, operation, etc. over a 20 year planning period.

Prior to 1967-68 fiscal year 37 studies were completed.

The importance of comprehensive planning, integrating not only all modes of travel but also all municipal servicing programs in the establishing of an optimum development plan is recognized. Two planning and development studies in which we are currently involved from both a technical and financial point of view are the Waterloo-South Wellington Study and the Oshawa Area Planning Development Study.

#### COMPUTER LIAISON AND TRAFFIC SAFETY PROGRAM GROUP

##### COMPUTER LIAISON

Formerly this was a part time operation. In the fall of 1965 the Group began full time operations on an experimental basis and in the summer of 1966 was recognized as a Group of the Division. The Group provides computer liaison services for the whole Division.

It is responsible for the formulation of new programs, for the control of the flow of work requiring electronic computation and for assigning priorities where required.

A quantitative measure of the solving of day to day problems is not available although it forms a substantial part of the work of the Group. An area which benefited from special attention this year is the transfer of traffic volume count data through



various processes into computer storage. The increase in efficiency will make the data available at an earlier date. An official request form for new computer programs and program modifications was used for the last half of the fiscal year, and during that period 14 requests were submitted for new or modified computer programs. For the complete fiscal year 1,784 computer production requests were processed through the group. Of these, 946 were traffic count requests and 838 were requests for planning studies, accident rates and O/D surveys.

#### TRAFFIC SAFETY PROGRAM

Highway locations with high accident hazard have been studied in the past and the necessary remedial action taken. However, with the passage of time and the general improvement of all highways in Ontario it is becoming more difficult to determine the relative severity of each accident prone location.

The Traffic Safety Program Group is being set up with the aim of determining the degree of accident hazard and the priority with which the required remedial measures should be undertaken.

An evaluation of accident data has been made which resulted in a new approach in accident coding. Investigation and analysis are underway and adjustments are to be made to the existing Moving Accident Rate program. Statistical techniques are to be used in the determination of accident prone locations and recommendations are to be made to the Regional Traffic Engineers for investigation at the necessary sites. The Group will determine the order in which the required remedial measures should be carried out by developing a priority rating based on the Benefit/Cost ratio to be expected at each location.

#### TRAFFIC CONTROL SECTION

Requests for traffic control investigations increased during the year, over 50 percent more traffic reports were completed. The increase was particularly heavy in the Central Region.

The Section completed the following traffic studies:

STUDIES COMPLETED	EASTERN	CENTRAL	NORTHERN	SOUTHWESTERN	TOTAL
Intersection .....	6	63	24	56	149
Speed Zoning .....	11	27	55	25	118
Signing Projects .....	44	262	31	43	380
Signals .....	8	187	1	5	201
Illumination .....	37	83	14	11	145
Others .....	17	84	31	42	174
TOTAL .....	123	706	156	182	1,167

In addition, personnel of the section attended 44 municipal meetings and 31 others such as seminars, coroner's inquests, etc.

#### TRAFFIC CHARACTERISTICS SECTION

In the fiscal year ending March 31st, 1968, Characteristics Section of Traffic and

Planning Studies Division completed 1,400 requests for Traffic data consisting of 635 volume requests, 625 accident requests, 79 origin destination requests and 61 speed requests. In addition numerous incidental requests were answered, including many from private individuals and considerable amount of Traffic data were made available from the volume files to various firms of consulting engineers, planners, university research groups, etc.

There was no increase in the number of Permanent Traffic Count Stations from the previous year's total of 42, however, Etobicoke, Kipling and Midhurst were not operating for the entire year due to road construction, and North Bay was not operating until October due to technical difficulties.

Two more Permanent Traffic Count Stations were installed within municipalities in co-operation with the Department of Transport. They were, Port Arthur and Sault Ste. Marie.

Routine traffic counts obtained by Contract ceased October 31, 1967, and counting on a reduced scale by the Department's Traffic Control Field Staff was to begin in early April 1968. The counts obtained under contract including counts at Service Centre ramps were again supplemented by summer weekend counts in many areas taken by the Department, and the twice yearly vehicle classification counts obtained by Department Maintenance Patrols continued.

Beginning in December 1967 the Department undertook to count 3800 County and Township Road locations for the County Needs Study. The counts are being taken four times at each location in cycles of three months, ending in December 1968. The counts are being recorded in Kardex cards, analysed, and listed on computer input sheets at the end of each cycle, with copies of each sheet forwarded to the Municipal Roads Branch. It is hoped the County Road volumes will be ready to go to the Electronic Computing Branch for computation of the AADT's in February 1969.

The computer program introduced at the beginning of 1967 (the end of the fiscal year 1966-67) to store Permanent Count Station information on magnetic tape and produce monthly reports, continues.

Accident data on King's Highways and Secondary Highways continued to be punched on the cards. Toward the end of the fiscal year 1967-1968, it was decided to re-evaluate the information obtained from the Accident Reports via the punched cards, and it was observed that not enough information was being coded, or if coded, the program did not allow for its extraction, therefore a new program was begun, to be ready in early 1969, called the Accident Retrieval Program and together with this new program a more thorough coding system was devised and put into operation beginning with the January 1968 accident reports. The information to be obtained from this program will supercede, and render obsolete the presently produced Accident Experience listings which cover three years plus the current year. The revision and relisting of key point codes to facilitate punched card operation continued.

The O/D Data Processing Group were kept busy during the year. Approximately 270,800 interviews were coded and checked during the year. About 145,700 from approximately 147 stations operated during 1967 with a further 146,000 being recoded from previous surveys for current use. A complete check and correction prior to linking of approximately 54,500 interviews on consultants surveys from previous years, and 25,000 interviews were checked on consultants 1967 surveys. In

addition there were approximately 70 special assignments, such as plotting, building O/D tables etc. for the use of Planning Studies Section.

In conclusion the various routine traffic characteristics reports were published throughout the year.

**HIGHWAY SAFETY**

In 1967, Ontario had 145,008 accidents reported by the police, to the Department of Transport, an increase of 5,227 or 3.7% over the 139,781 recorded in 1966. A total of 1,400 fatal accidents in 1967, resulted in 1,719 deaths. Single vehicle type accidents totalled 30,254 or 20.9% of the Provincial total. There were 387 fatal accidents of this type, which resulted in 452 deaths, 26.3% of the 1,719 total.

Ontario had a registration of 2,729,984 motor vehicles in 1967, an increase of 92,718 or 3.5% over the previous year. They were driven on 86,000 miles of highways, roads and streets, by more than 3 million drivers. These motorists in 1967, drove an estimated 25 billion vehicle miles, an increase of 5.6% as compared to the 1966 mileage.

Approximately 11 billion, 800 million miles were recorded in 1967 by motorists travelling the King's Highway System, about 48% of the total mileage driven in the Province. Travel on 700 miles of controlled access highways; the Queen Elizabeth Way, 400-401, etc., accounted for 17% of the Provincial total and 33% of the total miles travelled on all highways in Ontario, exclusive of Secondary Highways.

The King's Highways recorded 798 deaths in 1967, as a result of 617 fatal accidents. There was evidence of drinking in 30% of these accidents. Single vehicle type fatal accidents accounted for 28.2% of the highways total . Drinking drivers were involved in 54.5% of the 178 fatal accidents, which resulted when the vehicle went off the road or struck a fixed object, on the King's Highways.

Fatal accidents in 1967, resulting in two or more deaths in each, accounted for 34.8% of the total (798) killed on the highways.

NUMBER OF FATAL ACCIDENTS	PERSONS KILLED IN EACH ACCIDENT	TOTAL KILLED
71	2	142
19	3	57
10	4	40
3	5	15
1	6	6
1	8	8
1	10	10

Ten (10) deaths in a two car head-on collision, on July 17th, 1967, was the highest total killed on the King's Highways, in one accident, since July 31st, 1953 when twenty (20) deaths resulted from a bus-truck collision.

In all Canada, in 1967, traffic accidents killed 5,412 persons an increase of 1.7% over the 1966 total 5,320 deaths. In the same year, United States had an all time high of 53,100 persons killed in traffic accidents. The registration for the States, was 96,988,132 motor vehicles.



The Department continued to provide every assistance to the O.P.P. in the operation of their air surveillance program of certain highways throughout the Province. Traffic accident statistics were compiled for the selection of sections of highways having a high frequency of accidents, resulting from speeds and other traffic violations. The operational administration of this program comes under the direct command of the O.P.P. Traffic Division. The Department of Highways co-operated by measuring and marking those sections of highways, having a high accident rate.

In 1967, Aircraft Patrols were effective in reducing accidents on 1,533 miles of highways as compared to 822 in 1966. A total of 13,028 charges were laid through this enforcement, for speeding, careless driving, improper passing, etc. In addition to charges laid, over 2,800 warnings were given motorists.

Traffic Seminars were continued throughout the Province in co-operation with the Ontario Provincial Police. These meetings have been very informative and of particular value to our Regional and District officials. Informal discussions with several hundred members of the O.P.P. and Municipal Police departments have resulted in many studies being carried out on the King's Highways, at locations considered accident prone or where certain driving hazards exist.

During the fiscal year 1967-1968, the Office of the Supervising Coroner for Ontario forwarded eighty-one Coroner's Inquest Reports to the Traffic and Planning Studies Division where recommendations were made by juries that the Department carry out certain improvements where fatal accidents have occurred on King's Highways. The findings and recommendations were given every consideration, and reports prepared by our Regional and District engineers, etc.

Motor vehicle accident statistics were compiled for presentation as highway safety evidence at Ontario Municipal Board Hearings, in the matter of applications by the Minister for approval of the closing of certain roads intersecting controlled-access highways.

#### COMPARATIVE STATISTICS: 1966-1967

	1966	1967	CHANGE
Total Accidents in Province .....	139,781	145,008	+3.7%
Accident Rate — Number of Accidents per one million vehicle miles travelled .....	5.9	5.8	
Accidents on King's Highways — exclusive of Secondary Highways .....	27,698	30,119	+8.7%
% of Total Accidents in Province .....	19.8%	20.8%	
Accident Rate for King's Highways — including Access Hwys. ....	2.6	2.6	
Total Fatal Accidents in Province .....	1,347	1,400	+3.9%
Fatal Accident Rate — Number of Fatal Accidents per 100 million vehicle miles travelled .....	5.7	5.6	
Fatal Accidents on King's Highways — exclusive of Secondary Highways .....	604	617	+2.1%
% of Total Fatal Accidents in Province .....	44.8%	44.1%	
Fatal Accident Rate for King's Highways — including Access Hwys. ....	5.6	5.3	
Total Persons Killed in Province .....	1,596	1,719	+7.7%
Death Rate — Number of Deaths per 100 million Vehicle Miles Travelled .....	6.7	6.9	



Persons Killed on King's Highways — exclusive of Secondary Highways .....	766	798	+4.2%
% of Total Persons Killed in Province .....	48.0%	46.4%	
Death Rate for King's Highways — including Access Hwys. ....	7.0	6.9	
<i>Controlled-Access Highways in Province</i>			
Accident Rate .....	1.6	1.6	
Fatal Accident Rate .....	2.6	2.3	
Death Rate .....	3.0	2.9	
<i>Toll Roads, Turnpikes, etc. in United States</i>			
Accident Rate .....	1.2	1.3	
Death Rate .....	2.8	2.3	
Death Rate for All U.S. Highways, Streets, etc. ....	5.7	5.5	

## FUNCTIONAL PLANNING DIVISION

I. C. Campbell, P.Eng., Functional Planning Engineer

A comparison of the general work completed by this Division for the last two years follows:

WORK LOAD	1966-67	1967-68
Functional reports completed .....	66	52
Functional reports reviewed .....	62	49
Functional reports in progress .....	156	151
Grading work projects issued .....	101	70
Structure projects completed .....	167	186
Interchanges completed (Regions) .....	38	37
Channelizations completed (Regions) .....	88	59

Of the Functional Reports issued, many were of complex urban freeway design as can be seen from the following examples:

- E. C. Row Expressway in Windsor.
- C.A.H. 402 in the City of Sarnia.
- Q.E.W. Extension at Niagara Falls.
- C.A.H. 406 in the City of St. Catharines.

Many major highway designs were also issued:

- Highway 3 — Tillsonburg Bypass
- Highway 7 — Brampton easterly
- Highway 5 — Tansley to Waterdown
- Highway 7 — Markham westerly
- Highway 17 — Ottawa westerly
- Highway 2 — Trenton to Belleville
- Highway 11 — Burk's Falls Bypass

The staff training program continued to gain momentum as four courses were held involving 29 members of the Functional Planning staff.

A detailed account of the work processed by the four regions and the Head Office section follows.

HEAD OFFICE FUNCTIONAL PLANNING SECTION

P. J. Harvey, P.Eng., Functional Planning Review Engineer

This section of the Functional Planning Division has the following main responsibilities:

- It reviews the work of the four regions in the Division.
- It reviews and records subdivision plans affecting the Planning Branch.
- It prepares the design standards and procedures for the Division.
- It performs overall administrative duties such as training, formation of personnel policies, etc.

A summary of the work processed by the Head Office of the Functional Planning Division during the 1967-68 fiscal year is shown in the following tables:

HEAD OFFICE FUNCTIONAL PLANNING — 3 PROJECT GROUPS

GENERAL WORK	1966-67	1967-68
Functional reports prepared .....	—	1
Functional reports issued .....	66	53
Functional reports reviewed .....	62	49
Functional reports in progress .....	1	2
Preliminary reports reviewed .....	76	29
Work projects prepared .....	3	3
Work projects reviewed .....	113	102
Work projects in progress .....	8	1
Design criteria prepared .....	3	—
Design criteria reviewed .....	233	144
Design criteria revised .....	79	72
Assumptions, designations, transfers, closings, CHA Criteria and Revocations .....	84	90
Permit applications reviewed .....	—	40
Property sales reviewed .....	—	20
Consultant and municipal agreements .....	19	17
Miscellaneous assignments .....	13	17
INTERSECTION WORK		
Interchanges (designed or reviewed) .....	35	41
Channelizations (designed or reviewed) .....	73	111
Truck climbing lanes .....	—	6
Minor intersections .....	—	8
Service centres .....	6	4
Standards prepared .....	4	8
Connecting Link projects reviewed .....	20	33
Contract review .....	297	203
Miscellaneous assignments .....	14	30

## RIGHT OF WAY WORK

Subdivision plans plotted .....	675	750
Subdivision plans reviewed .....	195	250
Exemptions from subdivision control .....	480	500
Official plans .....	15	21
Amendments to official plans .....	60	75
Restricted area and building by-laws .....	2,000	2,000
Road openings/closings .....	60	75
General enquiries .....	100	175

## TRAINING COURSES

Courses prepared and completed .....	—	4
Number of students .....	—	39
Additional course participation (other divisions) .....	—	3
Number of students .....	—	25

## CENTRAL REGION FUNCTIONAL PLANNING SECTION

**R. G. Burnfield, P.Eng., Regional Functional Planning Engineer**

The following are completed projects during the year which are worthy of special note:

1. Model of Dundas By-Pass showing route location and presentation.
2. Model construction of high level bridge at East Main Street, City of Welland.
3. Paper presented at the 1967 Annual Convention of the Canadian Good Roads Association, Vancouver. "A Modern Approach to Three-Dimensional Alignment Design for New Highways".
4. Paper presented at the 47th Annual Meeting of the Highway Research Board, Washington, D.C. "A Three-Dimensional Approach to Alignment Design".
5. Model of interchange complex, Highway 401 and 27.
6. Q.E.W. Extension in City of Niagara Falls.
7. Functional report on Highway 27 and Belfield Expressway.

The following is a list of Functional Planning reports completed by the consultants:

1. W.P. 204-63, Highway 5, Waterdown to Tansley.
2. W.P. 202-63, Highway 54, Onondaga to Cainsville.
3. W.P. 267-63, Highway 8, Grimsby to Beamsville.
4. W.P. 826-67-1, W.P. 181-64-1, Highway 47, Stouffville to Goodwood.
5. W.P. 70-65; W.P. 71-65; W.P. 69-65-1, Highway 7, Markham to Greenriver.
6. W.P. 126-58-03, Highway 406, Q.E.W. to Westchester Avenue.

The total work carried out by the Central Region is summarized below:

### CENTRAL REGION — 6 PROJECT GROUPS

TYPE OF WORK	DISTRICT 4		DISTRICT 6		DISTRICT 7		TOTAL	
	66/67	67/68	66/67	67/68	66/67	67/68	66/67	67/68
<b>FUNCTIONAL REPORTS</b>								
Completed .....	10	5	3	9	—	4	13	18
In progress .....	26	26	21	17	11	15	58	58
<b>GRADING WORK PROJECTS</b>								
Completed .....	33	5	3	6	13	10	49	21
In progress .....	31	29	5	7	2	1	38	37
<b>RESURFACING AND PAVING PROJECTS</b>								
Completed .....	10	2	3	3	2	—	15	5
In progress .....	6	6	4	—	3	10	13	16
<b>INTERCHANGES</b>								
Completed .....	22	—	7	31	—	—	29	31
In progress .....	23	39	62	35	—	1	85	75
<b>STRUCTURES</b>								
Completed .....	73	1	20	145	7	3	100	149
In progress .....	101	152	208	66	9	10	318	228
<b>CHANNELIZATIONS</b>								
Completed .....	27	5	15	28	3	2	45	35
In progress .....	60	45	39	20	3	6	102	71
<b>NON-WORK PROJECTS</b>								
Completed .....	4	8	12	6	3	6	19	20
In progress .....	1	2	8	4	1	1	10	7
<b>SPECIAL STUDIES</b>								
Completed .....	3	6	3	5	—	—	6	11
In progress .....	1	3	2	0	—	—	3	3
<b>BOARD OF TRANSPORT COMMISSION</b>								
Completed .....	12	4	4	1	3	7	19	12
In progress .....	1	19	1	5	6	4	8	28
<b>MUNICIPAL STUDIES</b>								
	90	170	70	195	—	—	160	365
					66/67	67/68		
Property Sales .....					227	203		
Property Requests .....					104	63		
Applications for permits .....					655	507		
C.A.H. Criteria .....					10	9		
Assumptions and Designations .....					20	7		
Transfers .....					1	—		
Closings .....					4	4		
Revocations .....					6	5		
Subdivisions .....					319	338		
O.M.B. Hearings .....					5	—		

### SOUTHWESTERN REGION FUNCTIONAL PLANNING SECTION

R. G. Gascoyne, P.Eng., Regional Functional Planning Engineer

Of the various projects considered in the Southwestern Region during the past year, the following are worthy of special note:



Work continued on the proposed new Highway 40 between Sarnia and Wallaceburg with the completion of an approved alignment for a 16 mile section from Highway 80 southerly to Wallaceburg. Discussions are currently being held with the Chippewas of Sarnia Band Council in an effort to obtain the required highway right of way through their reservation.

The ten and one half mile E. C. Row Expressway, connecting Highway 18 on the west with Highway 39 on the east; Functional Report was completed and presented to Windsor City Council. Council accepted the report and detail design work is presently underway.

#### Functional Planning Reports completed by consultants:

- Highway 402, Blue Water Bridge (Sarnia) easterly 4.3 miles.
- E. C. Row Expressway, Windsor.
- Highway 19, Straffordville to Tillsonburg.
- Highway 19, proposed grade-separation at Pennsylvania New York Central tracks in Tillsonburg.
- Highway 26, Thornbury to Collingwood.
- Highway 10, Dundalk to Markdale.

A summarized account of the total work completed is as follows:

#### SOUTHWEST REGION — 4 PROJECT GROUPS

TYPE OF WORK	DISTRICT 1		DISTRICT 2		DISTRICT 3		DISTRICT 4		TOTAL	
	66/67	67/68	66/67	67/68	66/67	67/68	66/67	67/68	66/67	67/68
<b>FUNCTIONAL REPORTS</b>										
Completed .....	—	4	7	2	5	1	4	2	16	9
In progress .....	9	9	11	8	6	9	6	11	32	37
<b>GRADING WORK PROJECTS</b>										
Completed .....	2	3	1	3	—	3	1	6	4	15
In progress .....	—	4	—	—	3	9	4	2	7	15
<b>RESURFACING AND PAVING PROJECTS</b>										
Completed .....	4	—	2	4	5	4	7	—	18	8
In progress .....	—	2	7	5	2	14	—	3	9	24
<b>INTERCHANGES</b>										
Completed .....	—	—	1	—	—	—	—	—	1	—
In progress .....	—	1	10	12	3	11	5	4	18	28
<b>STRUCTURES</b>										
Completed .....	3	5	5	1	6	—	6	5	20	11
In progress .....	13	6	36	34	3	7	11	16	63	63
<b>CHANNELIZATIONS</b>										
Completed .....	1	4	2	2	14	1	2	—	19	7
In progress .....	13	8	—	3	10	4	10	16	33	31
<b>NON-WORK PROJECTS</b>										
Completed .....	2	5	4	7	—	2	7	1	13	15
In progress .....	1	—	4	4	4	1	3	—	12	5

## SPECIAL STUDIES

Completed .....	—	—	—	—	—	—	—	—	—
In progress .....	—	—	—	—	—	—	—	1	1

## BOARD OF TRANSPORT COMMISSION

Completed .....	—	—	2	3	4	5	—	8	6	16
In progress .....	4	3	8	5	6	—	—	2	18	10

	66/67	67/68
Property Sales .....	39	58
Property Requests .....	56	56
Applications for Permits .....	162	168
C.A.H. Criteria .....	4	7
Assumptions and Designations .....	8	9
Transfers .....	4	5
Closings .....	1	7
Revocations .....	—	2
Subdivisions .....	195	210

## EASTERN REGION FUNCTIONAL PLANNING SECTION

**J. L. Forster, P.Eng., Regional Functional Planning Engineer**

This past year 11 Functional Planning Reports and 8 grading work projects were completed by this Region. This represents a reduction from last year's total, due in part to the scheduling of projects and the extensive work which has been underway over the past year on major projects.

Work on Highway 417 from Ottawa to the Quebec border was delayed by the need to investigate foundation conditions at additional crossings of the South Nation River near Casselman. However, this work has progressed to the point where it is anticipated that a presentation of the proposed alignment from Ramsayville to the Quebec border will be made to the senior officials of the Department in the summer of 1968.

Despite some minor setbacks, the alignment for Highway 416 from Highway 401 to Ottawa will also be ready for presentation in the spring of 1968.

Completion of the photogrammetric corridor study this past winter on the relocation of Highway 17 from Highway 44 northerly to North Bay permitted commencement of the preparation of aerial mosaic plans. Active study of detailed alignments will commence in the summer of 1968.

A Technical Advisory Committee was set up during the year in the City of Ottawa which enabled the commencement, under "Special Agreement" with the City, of active work on the functional planning of the urban Freeway connections for Highway 417 and Highway 416 to the Ottawa Queensway.

The following Functional Planning Reports were prepared by consultants under the direction of the Regional Office in Kingston:

W.P.510-64, Highway 28, from Burleigh Falls north limits northerly 10.9 miles.

W.P.2-63, Highway 2, Trenton to Belleville.

W.P.138-65, Highway 60, 9 miles east of Madawaska easterly.

W.P.353-65, Highway 62, Maple Leaf westerly to 1.3 miles south of Highway 127.

The following table is a summary of the jobs completed and in progress:

### EASTERN REGION — 3 PROJECT GROUPS

TYPE OF WORK	DISTRICT 8		DISTRICT 9		DISTRICT 10		TOTAL	
	66/67	67/68	66/67	67/68	66/67	67/68	66/67	67/68
<b>FUNCTIONAL REPORTS</b>								
Completed .....	7	3	4	4	8	4	19	11
In progress .....	14	11	17	15	10	5	41	31
<b>GRADING WORK PROJECTS</b>								
Completed .....	4	—	4	1	6	7	14	8
In progress .....	—	3	6	7	14	6	20	16
<b>RESURFACING AND PAVING PROJECTS</b>								
Completed .....	2	1	2	5	2	—	6	6
In progress .....	—	5	—	12	—	3	—	20
<b>INTERCHANGES</b>								
Completed .....	2	1	5	3	—	—	7	4
In progress .....	4	12	20	43	—	—	24	55
<b>STRUCTURES</b>								
Completed .....	11	3	9	8	7	3	27	14
In progress .....	31	25	64	116	8	4	103	145
<b>CHANNELIZATIONS</b>								
Completed .....	7	4	4	5	1	1	12	10
In progress .....	6	5	15	10	2	2	23	17
<b>NON-WORK PROJECTS</b>								
Completed .....	3	—	1	1	—	4	4	5
In progress .....	2	4	2	1	2	3	6	8
<b>SPECIAL STUDIES</b>								
Completed .....	—	2	—	—	—	—	—	2
In progress .....	5	2	3	1	—	—	8	3
<b>BOARD OF TRANSPORT COMMISSION</b>								
Completed .....	4	4	1	3	3	—	8	7
In progress .....	7	4	3	7	1	1	11	12
					66/67	67/68		
Property Sales .....					52	55		
Property Requests .....					34	23		
Applications for permits .....					192	223		
C.A.H. Criteria .....					3	5		
Assumptions and Designations .....					9	9		
Transfers .....					3	—		
Closings .....					2	5		
Revocations .....					—	1		
Subdivisions .....					37	55		

### NORTHERN REGION FUNCTIONAL PLANNING SECTION

**P. D. Billings, P.Eng., Regional Functional Planning Engineer**

During the 1967-68 fiscal year the following projects worthy of note were completed:

—The four lane By-Pass of Gravenhurst was completed.

—A four lane By-Pass concept for Burk's Falls was completed.

—The planning work for Highway 69 between Gravenhurst and Footes Bay was completed.

During the year, the City of Sudbury and the Department executed an agreement for a Functional Planning Report for the Brady Street Expressway through the City of Sudbury. This work is being carried out by the consultant firm of M. M. Dillon under the direction of a Technical Advisory Committee.

This office also commenced the planning phase for ultimate freeway designs for approximately 400 miles of main arterial highways in this Region. The primary purpose of this long range planning work is to protect right of way for future construction.

The following Functional Planning Reports were completed by consultants under the direction of this office:

1. Highway 11, Burk's Falls By-Pass.
2. Highway 69, Bala to Footes Bay including overhead structures over the C.P.R. and C.N.R. north of Bala.

The following projects were completed by consultants on a "package deal" basis:

1. Highway 118, from junction Highway 69 easterly 2.5 miles.
2. Highway 629, from Timmins to Timmins Airport.

A summarized account of various work completed and in progress is as follows:

#### NORTHERN REGION — 2 PROJECT GROUPS

TYPE OF WORK	DISTRICT 11		DISTRICT 13		DISTRICT 14		DISTRICT 17		TOTAL	
	66/67	67/68	66/67	67/68	66/67	67/68	66/67	67/68	66/67	67/68
<b>FUNCTIONAL REPORTS</b>										
Completed .....	4	6	7	1	2	1	3	6	16	14
In progress .....	15	9	2	4	3	6	4	6	24	25
<b>GRADING WORK PROJECTS</b>										
Completed .....	9	9	11	2	7	4	7	11	34	26
In progress .....	16	9	3	7	4	7	5	9	28	32
<b>RESURFACING AND PAVING PROJECTS</b>										
Completed .....	4	2	3	—	3	3	7	1	17	6
In progress .....	9	2	7	9	5	9	2	2	23	22
<b>INTERCHANGES</b>										
Completed .....	—	2	—	—	—	—	—	—	—	2
In progress .....	—	4	—	—	—	—	—	—	—	4
<b>STRUCTURES</b>										
Completed .....	3	8	5	1	3	1	6	2	17	12
In progress .....	8	2	2	1	1	2	2	3	13	8
<b>CHANNELIZATIONS</b>										
Completed .....	2	4	5	1	2	—	3	2	12	7
In progress .....	5	3	3	3	—	—	3	3	11	9
<b>NON-WORK PROJECTS</b>										
Completed .....	5	3	3	3	2	—	4	3	14	9
In progress .....	2	2	6	1	3	—	4	3	15	6



## SPECIAL STUDIES

Completed .....	—	—	—	—	—	—	—	—	—	—
In progress .....	1	—	—	—	—	—	—	—	1	—

## BOARD OF TRANSPORT COMMISSION

Completed .....	3	1	5	2	—	—	9	4	17	7
In progress .....	4	2	2	2	—	—	5	2	11	6

	66/67	67/68
Property Sales .....	94	88
Property Requests .....	65	61
Applications for permits .....	319	431
C.A.H. Criteria .....	2	1
Assumptions and Designations .....	25	11
Transfers .....	13	13
Closings .....	21	17
Revocations .....	2	6
Subdivisions .....	44	65

## TOTAL NUMBER OF PLANS AND MILEAGE

TYPE	NOMENCLATURE	NO. OF PLANS	MILEAGE
PLAN TYPES A-G INCLUSIVE — ACQUISITION OF LANDS			
"A"	Land plan .....	913	371.84
"B"	Amended land plan .....	44	7.74
"C"	Limited interest plan .....	71	11.70
"D"	Plan of abandonment .....	17	0.91
"E"	Crown land plan .....	100	70.23
"F"	Amended Crown land plan .....	3	—
"G"	Crown land abandonment plan .....	8	2.11
PLAN TYPES I-M INCLUSIVE — ASSUMPTION OF EXISTING HIGHWAYS			
"I"	Preliminary assumption plan .....	27	33.89
"J"	Amended preliminary assumption plan .....	—	—
"K"	Assumption (replacing) .....	41	78.58
"L"	Assumption plan .....	64	22.74
"M"	Amended assumption plan .....	18	—
PLAN TYPES N-P INCLUSIVE — DESIGNATIONS OF HIGHWAYS			
"N"	Plan of a proposed highway .....	28	121.93
"O"	Highway Plan .....	81	465.13
"P"	Controlled access highway plan .....	1	0.25
PLAN TYPES Q-T INCLUSIVE — TRANSFER AND CLOSING OF HIGHWAYS			
"Q"	Reversion plan .....	—	—
"R"	Transfer plan .....	51	42.82
"S"	Road closing plan .....	46	20.03
"T"	Road closing plan (Ontario Municipal Board) .....	3	18.98
PLAN TYPES H AND U-X INCLUSIVE AND OTHERS —			
MISCELLANEOUS AND SPECIAL PLANS			
"H"	Navigable waters plan .....	11	0.13
"U"	Plan to illustrate description (including description reference) ..	325	65.02
"V"	Survey plan .....	7	—
"W"	Plan of Indian lands .....	9	10.42
"X"	Connecting line designations and agreements .....	40	115.91
	Miscellaneous plans .....	35	10.29
TOTALS .....		1,943	1,470.65

NORTHWEST REGION — PLANNING BRANCH

H. A. Mantle, P.Eng., Assistant Planning Engineer (North West)

	COCHRANE	SAULT STE. MARIE	FORT WILLIAM	KENORA
FUNCTIONAL REPORTS				
Completed .....	—	—	—	—
In Progress .....	—	—	—	—
GRADING WORK PROJECTS				
Completed .....	—	10	4	2
CHANNELIZATIONS				
Completed .....	—	2	1	2
STRUCTURE PROJECTS				
Completed .....	1	3	3	—
NON-WORK PROJECTS				
Completed .....	—	—	—	—
ENGINEERING SURVEYS				
Planning Mileage .....	—	57.0	22.7	22.1
Survey Mileage .....	41.8	81.5	23.3	28.1
BRIDGE SITES				
1. Plans .....	—	8	1	1
2. Surveys .....	—	8	1	1
RAILWAY CROSSING SURVEYS				
1. Plans .....	—	2	4	—
2. Surveys .....	1	3	2	1
MISCELLANEOUS				
1. Plans .....	1	6	7	3
2. Surveys .....	—	5	4	4
CROSS-SECTIONS				
Plotted .....	—	21.2	6.0	—
Field .....	—	61.5	34.4	15.4

## RESEARCH BRANCH

**M. D. Armstrong, P.Eng., Director of Research**

During this year, a fourth section was added to the Research Branch. It will be known as the Management Research Section, and its function will be to provide a wide range of consulting skills to assist departmental managers at all levels with management problems. A nucleus of staff was provided initially by transferring in a small systems and procedures group from another Branch, and it is intended to extend the range of skills by recruiting two Management Scientists experienced in organization theory and some of the quantitative methods used in operations research and systems engineering. Meantime, work has continued on many projects in the other three Sections of the Branch, and a number of technical reports have been published by members of the staff.

The Materials Research Section has continued its exploration of the many problems associated with Portland cement concrete and asphaltic concrete, including the causes of stripping and cracking of asphalt pavements and the skid resistances of pavement surfaces. The investigation into automobile corrosion and the effectiveness of corrosion inhibitors in de-icing salt is now complete and a report has been published. A project aimed at improved highway safety is currently underway to investigate new designs in guide-rails, signs and lighting poles.

The transportation and traffic engineering section is very active in the constant search for new or improved planning and design tools, but progress is limited by the smallness of the staff available for this work.

The Structural Research Section is investigating the behaviour of pavement and highway structures under load. The Bridge Research Unit is currently engaged in a programme of research into the fundamental behaviour of structural components and frameworks under static and dynamic loading. Structural strength, traffic loading and structural conditions are under simultaneous study in the development of a proposed new way of regulating the size and distribution of truck weights. The purpose of this work is to devise regulating methods which will allow the highest truck weights consistent with the strength of the Province's bridges.

Members of the Research Branch have contributed papers to a number of technical organizations throughout the year and through their participation in technical committees, they continue to keep abreast of the most recent technical achievements in the many facets of research in highway engineering.

### ROAD BASES EXPERIMENT

Measurements and observations have been continuing on this project. The peak spring Benkelman Beam rebound deflections have shown that for comparable deflections, equivalent thickness factors (in terms of crushed gravel) are determinable for each base type. Although the factors for 1967 were different to those derived from 1966 observations, they indicate the relative structural responses to loading during the appropriate period. Measurements have shown that rutting of the surface courses varies with the thickness and type of base material, and they have also established that sections without sand sub-base are subject to the least amount of frost heave. Traffic and axle-load studies have shown a lower frequency of heavy axle loads than was expected, and this is undoubtedly the reason why some of the test sections which were designed for early failure, have not yet failed.



This series of photos shows a remote-controlled vehicle being crashed into a post-and-cable guide rail at Department of Highways test area in Southwestern Ontario—(Research Branch)



The various performance indicators, such as dynamic deflections, permanent rutting, frost-heave and riding quality, indicate that full-depth asphalt sections (asphalt concrete directly on the clay subgrade) have scored consistently high levels of performance. A comprehensive report has been published detailing the results of the measurements, observations, and analyses.

#### TRANSVERSE CRACKING OF BITUMINOUS PAVEMENTS

Earlier results of transverse crack surveys, coupled with pavement sampling and laboratory testing, have shown an association between areas of higher transverse crack frequencies and surfacings made with penetration grade asphalt cements of low viscosity at 270° F. Similar data was collected during the 1967-68 period for a number of other contracts, and the surveys undertaken in 1966 were updated in 1967.

Laboratory work was concentrated in the area of asphalt cements and asphalt concretes. Asphalt cements recovered from the pavement samples were separated into constituent fractions by a column chromatographic technique. Measurements are also in progress to determine the thermal coefficient of expansion (linear) of the pavement samples in the —20° F to 32° F temperature range. Similar measurements are being made on frozen granular 'A' base materials.

An apparatus for testing the pavement samples in repeated flexure is being used to determine failure stresses and strains of asphalt concrete layers subject to low temperature and short loading time. An apparatus for measuring tensile creep is also under development.

#### USE OF RUST INHIBITORS IN ROAD SALT

This study was concluded in the Spring and a formal report was published in November 1967. The results of the study showed that corrosion of auto-body steel occurs during all seasons of the year. The highest corrosion rates were recorded in areas of high humidity, areas of high industrial and population density, and coastal areas. The lowest corrosion rates were recorded in very dry areas. The investigation also showed that the use of de-icing salts causes an increase in corrosion and that



none of the three corrosion inhibitors proposed for use with de-icing salt made any significant reduction in the amount of corrosion attributable to the use of de-icing salt.

As a direct result of this study, a member of the Research Branch staff is representing Canada on a special Task Force on vehicle corrosion sponsored by the Organization for Economic Co-operation and Development. The aim is to compile a report for world-wide distribution which will summarize international experience in "Motor Vehicle Corrosion and the Influence of De-Icing Chemicals". It is expected that this report will outline specific recommendations to reduce motor vehicle corrosion.

#### RESEARCH IN HIGHWAY TRAFFIC

Work is continuing on several traffic planning studies. The first is an examination of the most effective sampling procedures and rates for roadside-interview origin and destination surveys. Another study is directed toward developing methods of estimating average daily traffic volumes and design hourly traffic volumes from a few short periodic counts. Analysis of the study data for these two projects is virtually complete. As an extension of the second study, the Department's traffic data records are being examined in order to prepare an inventory of road sections having adequate design hourly volume estimates and to establish a priority list for future counting operations.

The development and evaluation of a satisfactory multipath traffic assignment method for use in traffic planning, is also continuing.

A new project initiated this year, in the areas of geometric design and traffic operations, has been a study of the feasibility of constructing additional short periodic passing lane sections on certain two-lane highways. The sections would be similar to truck-climbing lanes on hills, although they could be constructed at locations other than hills. Construction of such passing lane sections may be economically feasible at locations having high, but infrequent tidal type flows (summer weekend or at locations with numerous slow vehicles and few passing opportunities. The problem is being analyzed by means of computer simulation of traffic flow, based on and validated by field traffic studies. The value of the benefits obtained will be compared with construction and maintenance costs for such lanes to determine their feasibility.

#### STUDIES OF THE SKID RESISTANCE OF PAVEMENT SURFACES

A skid resistance survey of the provincial highways has been completed and the levels of pavement skid resistance in the different regions and districts of the Province have been determined. It has been established from the survey that the type of asphalt mix has negligible effect on the skid resistance level, but that the rock type used in the mix strongly affects the skid performance of the pavement. Particle size of stone and sand in the asphalt wearing course has also been found to be a dominant factor influencing resistance to skidding.

The development of a stereo-photo interpretation method of evaluating pavement surfaces is continuing. Surface texture parameters have been identified and the method is proving to be a practical way of estimating the skid resistance of a pavement surface. Correlation between the stereo-photo interpretation method and analytical results obtained with the brake-force trailer is now being established.

Results obtained from brake-force trailer tests and 'stopping-distance' tests on concrete pavements have shown the need for improved skid resistance on some of our concrete pavements. Laboratory tests and field tests are now underway to find an economical means of improving surface texture. One objective of this project will be

to improve the problem of below standard skid resistance of pavements in those areas where the local aggregate is of poor wearing quality.

#### ULTIMATE LOAD CAPACITY OF BRIDGES

Statistical data relating to bridge structures was accumulated as an initial step in estimating the variations in strength of bridges in the Province and the data is now being processed to provide information required for the study of allowable truck weights, and in determining the direction of future research in the strength evaluation of existing structures, and future design strategies. In the computation of the force effects generated in bridge structures by trucks, representative loading patterns are synthesized in terms of representative load functions. The results of these studies will also be utilized for the development of load legislation, permissible load ratings and design procedures.

Research into the elastic and plastic behaviour of bridge-decks has resulted in the development of new methods of elastic analysis and design relating to grid type structures and curved elevated roadways. These investigations have led to associated research projects at Ontario universities under the Joint Highway Research Programme; these will specifically investigate the elasto-plastic behavior of girder-slab type bridge decks using analytical and experimental means to develop improved methods of analysis and design.

#### MAINTENANCE MANAGEMENT STUDY

As a result of the continuing Maintenance Management Study, the new maintenance reporting system was introduced to more districts. Although the reporting system is at the core of the whole management system, many other important areas of maintenance are being developed. For example, clear statements of the required quality have been generated and are undergoing field testing for validity. The allocation of snow removal equipment and the introduction of the required shift schedules have also been examined from the viewpoint of the required standard of maintenance, and substantial savings from reduced manpower are anticipated as a result of this analysis.

As the study progresses, the staff of the Operations Branch becomes more involved and the co-ordinating role of the Research Branch diminishes. This process, which was planned at the outset has proceeded so well that future reports on the study will be included in the report by the Maintenance Engineer, and dropped from the Research Branch report.

Work in the Municipal area has recommenced under the guidance of an Advisory Committee composed of City and County Engineers who have reviewed the activity definitions used by the Department and adapted them for municipal use. Other material produced from the Departmental study has also been reviewed and, where pertinent, distributed to the Municipalities for guidance. It is anticipated that the advisory committee will propose a full study in at least two of the Municipalities.

#### STRUCTURAL EVALUATION OF LIGHTLY TRAFFICKED ROADS

An interim report has been issued on this study of test sections of roads in twelve municipalities. The Benkelman Beam was used to determine the seasonal fluctuations in the strength of the roads and to establish future design criteria. The report summarizes the results and presents some of the more significant findings; the most

important of these is that the method of evaluation used for other roads is equally suitable for those carrying low traffic volume. Benkelman Beam deflection measurements are continuing and a traffic survey is planned for October 1968.

In March 1968, a road rating experiment was carried out to determine the relationship between the roughness of pavement measured by the Department's Profilometer and the riding qualities of pavement, as determined by the road user. The result showed good correlation between the road user's opinion and the roughness index 'q' obtained by the Profilometer: A report of this work is available.

#### PERFORMANCE OF CONCRETE PAVEMENTS UNDER TRAFFIC

A field survey of sections of pavement, representative of the various slab design materials used and traffic volumes experienced, has been undertaken. As a result of data obtained from this survey, changes in design have been made to introduce shorter joint spacing, and where heavy traffic is anticipated, a stabilized base has been specified for future construction.

#### FULL-SCALE IMPACT TESTS ON LOW-COST BARRIER SYSTEMS, LIGHTING POLES, AND SIGN SUPPORTS

During the fall of 1967 a series of full-scale impact tests were made on guide rail systems for rural highways. The tests were undertaken to assess the effectiveness of the standard post and cable system and to develop a low cost barrier system for rural use. In each test, the vehicle was directed into the barrier at an entry angle of 20 degrees at speeds up to 50 m.p.h. The facilities of the project were also used to test the performance of poles and sign supports fitted with frangible mountings so that comparison could be made with those mounted in the conventional way.

The tests have indicated that an effective post and cable system could be developed in the form of three ½ inch steel cables on 6-inch cedar posts at 12-foot centres, with special provisions for tensioning and anchoring the cables. The more costly alternative of heavy or light steel beams on similar posts were unable to prevent the test vehicles from leaving the road under the same conditions of impact.

Preliminary tests on terminal treatments for steel beam guide rails and/or the strong-beam design of aluminum median barriers indicated the need for further development work to achieve satisfactory systems.

The limited series of tests on lighting poles and sign supports confirmed the advantages of break-away bases for use where the installation needs to be close to the travelled lanes and cannot be adequately protected.

This series of tests has provided valuable information on the performance of low cost barrier system which was used by the Road Design Office to prepare an interim design for a three-cable system for use on rural highways where vehicle penetration does not have to be limited. The new system will be evaluated in a second series of tests scheduled for the fall of 1968. This series of tests will also include the impact testing of sectional tubular sign supports fitted with frangible bases. It is also expected that low and high speed tests will be undertaken on a new concrete median wall. Two reports will be prepared; one will report on the evaluation of the guide-rail system and the second will deal with the results of the impact tests on the signs and lighting standards.



## D.H.O. TECHNICAL REPORTS

Nine technical reports in the Research Report series were published this year. Five of them were prepared by Department staff and four resulted from research projects carried out by Ontario Universities under the Ontario Joint Highway Research Programmes. Research reports prepared by Department staff were:

- RR 131 "Application of Transformed Highway Loads to Influence Lines of any Shape", by K. G. Tamberg, P. F. Csagoly and F. N. Jung (Research Branch). Presented to the American Concrete Institute.
- RR 135 "The Corrosion of Auto-Body Steel and the Effects of Inhibited De-icing Salts", by H. J. Fromm (Research Branch). Presented at the 47th Annual Meeting of the Highway Research Board.
- RR 136 "Interim Report on a Full-Scale Road Experiment" by W. A. Phang (Research Branch).
- RR 137 "High Speed Data Processing for Fleet Management" by J. G. Slubicki (Equipment Division) and K. Y. Shen, (Electronic Computing Branch). Presented at the 47th Annual Meeting of the Highway Research Board.
- RR 138 "A Three-Dimensional Approach to Highway Alignment Design" by E. H. Geissler (Functional Planning Section). Presented at the 47th Annual Meeting of the Highway Research Board.

Thirteen other papers prepared by D.H.O. staff were published as follows:

"Deterioration of Reinforcing Steel in Concrete Structures", by P. T. Vincent (Materials and Testing Division). Presented at a meeting of the National Association of Corrosion Engineers.

"Experience with Automatically Controlled Pavers in Ontario", by J. T. Corkill (Materials and Testing Division). Presented at the 1967 Annual Convention of the Canadian Good Roads Association.

"A Modern Approach to Three-Dimensional Alignment Design for New Highways", by E. H. Geissler (Functional Planning Section). Presented at the 1967 Annual Convention of the Canadian Good Roads Association.

"Report on Highway Bridge Design in Ontario", by B. S. Richardson (Bridge Design Section). Presented at the 1967 Annual Convention of the Canadian Good Roads Association.

"A Systematic Approach to the Management of Highway Maintenance", by A. Leslie (Research Branch). Presented at the 1967 Annual Convention of the Canadian Good Roads Association.

"Stripping in Asphaltic Concrete Mixes", by F. Field (Materials and Testing Division), and W. A. Phang (now Research Branch). Presented at the 12th Annual Conference of the Canadian Technical Asphalt Association.

"Some Remarks on Sample Rate", by M. D. Harmelink (Research Branch). Presented at the Conference on New Concepts in O-D Studies, sponsored by the O-D Committee of the Traffic and Operations Department of the Highway Research Board.

"Unusual Abutment Movements at Underpass Structures on the Mac-



donald-Cartier Freeway", by A. G. Stermac, M. Devata and K. G. Selby (Materials and Testing Division). Presented at the 20th Canadian Soil Mechanics Convention.

"Field Performance of Preformed Neoprene Bridge Joint Seals", by B. Chojnacki (Materials and Testing Division).

"A Road Rideability Rating Experiment", by G. Chong (Research Branch).

"Evaluation of Low-Traffic Volume Municipal Roads", by G. Chong (Research Branch).

"Full-Scale Impact Tests on Low-Cost Barrier Systems, Lighting Poles and Sign Supports, 1967", by M. D. Armstrong, P. Smith, M. Wolkowicz (Research Branch) and R. G. Jasper (London District).

Three reports resulting from the Maintenance Management Studies were published as follows:

"Analysis of Winter Maintenance Operations"

"Questionnaire Survey of Winter Maintenance Management"

"Analysis of Activity during 1967 Summer Maintenance"

#### THE ONTARIO JOINT HIGHWAY RESEARCH PROGRAMME

New projects authorized under this programme during 1967/68 were as follows:

At Queen's University:

1. Structural Behaviour of Grids (Project Q-42)
2. Concentrated Loading of 2-Way Slabs (Project Q-43)

At University of Waterloo:

1. Use of Accident Data in Highway Decision Making (Project W-10)

Reports published under the Ontario Joint Highway Research Programme were as follows:

- RR 127 "A Design Framework for Highway Pavements" by B. G. Hutchinson (Final report on Project W-4, University of Waterloo).
- RR 130 "A Study of the Consolidation Characteristics of Sensitive Clay Subject to a Constant Stress Ratio" by G. P. Raymond, P. M. Jarrett and R. Pratt (Final report on Project Q-35 Queen's University).
- RR 132 "An Economic Evaluation Framework for Regional Highway Planning Studies", by J. A. O'Flynn (Final report on Project W-8, University of Waterloo).
- RR 133 "Characteristics of Commercial Resorts and Recreational Travel Patterns in Southern Ontario", by G. D. Boggs and R. McDaniel (Final report on Project L-1, University of Western Ontario).

**SERVICES BRANCH****L. R. EADIE, Director of Services**

The Services Branch, through its various sections, functioned throughout the year as co-ordinator and expeditor of services for the other branches of the Department.

The eleven Sections of the Services Branch are:

1. Executive
2. Administrative
3. Documents
4. Equipment
5. Office Services
6. Special Services
7. Supply
8. Tenders

**RIGHT-OF-WAY DIVISION**

9. Land Surveys
10. Property
11. Regional Services Managers

**ADMINISTRATIVE SECTION****J. L. Monkman, Administrative Officer**

The Administrative Section processes accounts payable and receivable, maintains personnel records and documentation, attendance recording. It prepares payrolls and compiles and maintains the statistical records of the Services Branch. The Section also formulates and implements the procedures for these functions.

**DOCUMENTS SECTION****T. M. Fraser, Superintendent**

The Documents Section provides record management services for the Department. These services include the development and implementation of record retention policy, the use of microfilm and the establishment of filing systems to meet information requirements. A central repository is maintained for the safekeeping of documents and as a composite source of information.

The maintenance of a registry of engineering drawings and property plans for control and reference purposes is a further responsibility of the Section.

The Section also maintains 3 technical libraries, arranges subscriptions and distributes periodicals throughout the Department.

A writing and editing service is provided for bulletins and instructional manuals.

**EQUIPMENT SECTION****W. G. Cooke, P.Eng., Superintendent**

Equipment Section provides equipment for the Department and the technical supervision necessary for the maintenance of such equipment.

The Head Office staff prepares specifications, inspects all major equipment purchases and develops new machines.

Budget requirements for equipment replacement are based on a cost analysis programme worked out in conjunction with the Electronic Computing Branch. Additional equipment is also supplied to take care of expanding departmental responsibilities and services.

Control of departmental usage of equipment, and cost of repairs, is done through a continuing study carried on by the Section, in conjunction with the Electronic Computing Branch.

General supervision and organization of D.H.O. garages, staffs, equipment, records, and procedures, as well as vehicle maintenance methods and programmes, are the responsibility of the Section.

The Section operates two garages — District No. 42 at Downsview, and 881 Bay Street, near the Parliament Buildings. It also operates the Instrument Repair Shop at Downsview. Its Training School staff was active throughout the Province, giving courses on D.H.O. mechanics and allied trades.

The Section's tree planters moved and replanted 459 trees.

Several mud jacking operations were carried out during the year.

The Section arranged for and supervised the drilling of 29 wells. The Well Testing unit cleaned and tested 26 wells.

Staff is supplied by the Section for instrument evaluation studies, special engineering work, and special ferry projects.

The Section is responsible for the control of parking spaces for employees, the policing of the parking lots at Downsview, and the winter maintenance operations in the Downsview area.

Drives, parking lots, and miscellaneous areas adjacent to the Department's buildings at Downsview are maintained by the Section.

The following units of equipment were used during the year:

#### GENERAL

Augers, earth .....	34	Ferries .....	7
Backhoes .....	2	Generators, sand blast .....	34
Benders, bar .....	10	Generators, steam .....	99
Blowers, truck mtd. snow .....	14	Gradalls .....	8
Blowers, tractor mtd. snow .....	9	Gradebuilders .....	39
Blowers, walking type, snow .....	4	Graders, power .....	315
Compactors .....	16	Hydraulic units, elec. ....	328
Compressors .....	358	Hydraulic units, full .....	599
Conveyors .....	9	Hydraulic units, power .....	2
Cranes, hydraulic .....	6	Lifts, aerial .....	7
Cranes, yard .....	2	Loaders .....	155
Cranes, truck attached .....	23	Loaders, fork lift .....	9
Chippers, wood .....	7	Maintainers .....	5
Deslickers .....	1	Maintainers, multi-blade .....	2
Distributors, emulsion .....	15	Maintenance kettles .....	155
Ditchers .....	2	Mixers, cement .....	10
Drills, core .....	5	Mixers, cold patch .....	2
Eductors .....	7	Mixers, paint .....	23

Mixers, paint and bead .....	19	Snowmobiles .....	10
Mixers, pulvi .....	6	Spray painting units, port. ....	16
Mud jacks .....	1	Sprayers, weed .....	50
Plants, crushing .....	2	Spreaders, mulch .....	20
Plants, port screening .....	9	Stripers .....	27
Plants, generating power .....	104	Swamp buggies .....	8
Ploughs, one way .....	953	Sweepers, power .....	18
Ploughs, reversible .....	51	Tractors, track .....	36
Ploughs, vee .....	399	Tractors, wheeled .....	418
Pumps, dispensing .....	356	Trailers .....	435
Pumps, fire protection .....	24	Trucks .....	1,982
Removers, paint line .....	2	Tunnel Rinser .....	1
Rodders, power .....	2	Tunnel Washer .....	1
Rollers .....	58	Welders .....	54
Roughness machines (road bump test) ....	3	Wings, truck mtd., right .....	684
Sandspreader bodies .....	710	Wings, truck mtd., left .....	3
Sand driers .....	6	Wings, grader, right .....	157
Scales, highway .....	60	Wings, grader, left .....	2
Seeders, hydro .....	21	Zone line testing machines .....	1
Sewer cleaners (truck loader) .....	1	Miscellaneous equipment	
Sewer cleaners (power bucket) .....	1	(not detailed) .....	6,352
Shovels, power .....	2		

## INSTRUMENTS

Binoculars .....	123	Radios, receiver sets .....	5
Box locators .....	95	Radios, sending and receiving,	
Cameras .....	581	vehicle mtd. ....	583
Detectors, fall out .....	1	Radios, sending and receiving stat. ....	169
Detectors, vehicle .....	26	Radios, sending and receiving,	
Levels .....	566	walkie-talkies .....	256
Meters, Exposure .....	66	Recorders, speed .....	21
Micro-wave measuring units —		Recorders, traffic .....	635
tellurometers .....	2	Recorders, traffic w/loop detector .....	91
Micro-wave measuring units —		Recorders, water level graph .....	15
geodimeters .....	5	Recorders, tape .....	12
Plummets .....	1	Transits .....	590
Print copiers .....	7	Transits, precision 1" (1 second) .....	16
Projectors .....	42	Truometers .....	38

The new equipment listed below, and included in the above lists, was purchased to replace obsolete and worn out equipment, and to meet the need for additional equipment.

## GENERAL

Augers, earth .....	2	Rollers .....	5
Benders, bar .....	1	Sandspreader bodies .....	85
Chippers, wood .....	2	Scales, highway .....	2
Compressors .....	41	Seeders, hydro .....	3
Cranes, truck mtd. ....	1	Snowmobiles .....	3
Generators, steam .....	13	Sprayers, weed .....	4
Graders, power .....	21	Spreaders, mulch .....	2
Hydraulics, elec. ....	20	Stripers .....	2
Hydraulics, full .....	51	Swamp buggies .....	1
Lifts, aerial .....	2	Sweepers .....	3
Loaders .....	18	Tractors, wheeled .....	27
Loaders, fork lift .....	2	Trailers .....	6
Plants, generating power .....	4	Trucks .....	330
Ploughs, one way .....	95	Tunnel Rinser .....	1
Ploughs, reversible .....	3	Tunnel Washer .....	1
Pumps, dispensing .....	33	Welders .....	1
Pumps, fire protection .....	3	Wings, grader, right .....	14
Remover, paint line .....	1	Wings, truck, right .....	60



## INSTRUMENTS

Binoculars .....	6	Radios, sending and receiving, stat. ....	21
Box Locators .....	14	Radios, sending and receiving, walkie-talkie .....	62
Cameras .....	73	Recorders, traffic .....	247
Micro-wave measuring units .....	2	Recorders, speed .....	2
Projectors .....	3	Transits .....	18
Radios, sending and receiving, vehicle mtd. ....	70	Truemetres .....	3

## OFFICE SERVICES SECTION

## S. C. Booth, Superintendent

The Office Services Section is responsible for the procurement of office supplies, furniture, office equipment, stationery, manuals and medical supplies, and for the distribution of these to all Regional and District Offices, Branches and Sections of the Department.

This Section is organized into various operating units, each with clearly designated functions and responsibilities. The units immediately connected with the steady stream of D.H.O. requests for office supplies and services are the Stationery Stock and Office Equipment, Forms Control, Postal, Manuals Control, Whiteprint and Photographic and Offset Reproduction Units. The supplies and services rendered by the Office Services Section are indicated by the volume of requests processed during the year.

## 1. Stationery Stores and Equipment

Requisitions processed (averaging 6 items per requisition) 17,700.

## 2. Forms Control Unit

Initiated in October 1965, this unit has been instrumental in minimizing the overall number of forms in use. During the year, 58 Forms were declared obsolete and 64 new Forms were catalogued. Total numbered Forms in active use 1,596.

## 3. Postal Unit

Total incoming post including registered mail .....	347,771
Total dispatched post .....	620,320

## 4. Manuals Control Unit

Issued 9,856 copies of procedural manuals, the majority being issued to Departmental personnel. The Unit also maintains an up-to-date mailing list and during the fiscal year processed 213 requests for printing and mailing revisions to up date manuals.

With the exception of manuals restricted to Departmental use, complimentary copies are issued on request to Ontario Provincial Departments, Federal and State Highway Departments and University Libraries.

Unrestricted manuals are also available to contractors, municipalities and other people engaged in highway construction.

## 5. Whiteprint and Photographic

Requisitions processed 20,266 (reproducing over 1,894,000 linear feet of whiteprints and 115,400 photographic exposures).

## 6. Offset Reproduction

Requisitions processed 5,562 (reproducing over 18,200,000 impressions from 67,600 printing plates).

## SPECIAL SERVICES SECTION

### C. S. Moose, Manager

The Special Services Section acts for the Department in liaison with the Department of Public Works in all matters pertaining to buildings, building sites, office and shop accommodation. The Section is also responsible for all communications within the Department such as telephone, teletype and radio facilities. The Administration of Service Centres on controlled access highways also falls within the Section's jurisdiction.

### SERVICE CENTRES

The Section is responsible for administering the Department's policy regarding the selection and development of Service Centres on controlled access highways.

At the conclusion of the 1967-68 fiscal year, seventeen Service Centres had been established on the Macdonald-Cartier Freeway and contracts had been awarded for an additional two sites in the Mallorytown area. Construction of these Centres will be undertaken in conjunction with the highway construction between Gananoque and Brockville and completion which is scheduled for the Fall of 1968 or the Spring of 1969 will conclude our present Service Centre program for the Freeway. Our program for Highway 400 has also been concluded for the present and the four sites now operating on the four lane section of this Freeway appear adequate to handle traffic volumes projected for the next few years.

Public use of Service Centres continues to exceed all expectations and during the summer of 1967 normally busy periods were magnified tremendously by heavy traffic volumes generated by "Expo 67". To cope with this volume many of the lessees have found it necessary to carry out an annual renovation and expansion program particularly with regard to washroom facilities, sewage systems, parking areas, dining room and take-out facilities. Certain lessees are also considering providing supplementary cafeteria operations to provide more rapid service during peak volume periods. Seventeen of the nineteen picnic areas, established adjacent to existing Service Centres on the Macdonald-Cartier Freeway and Highway 400, were open to the public and received extensive use during the summer of 1967. Development of the two remaining sites is nearing completion and all areas will be available for public use during the coming season. Improvement of picnic areas is of course a continuing program and during 1968 additional clearing, tree planting, landscaping, seeding and mulching will be carried out.

Toilet facilities have been provided at eighteen sites and tenders for construction of these facilities at the one remaining location are presently being prepared.

During the summer of 1967 the Section staffed and operated twelve of sixteen tourist booths located at Service Centres on the Macdonald-Cartier Freeway. From all accounts this operation was very successful.

### COMMUNICATIONS

During 1967-68 the Section processed a total of 2,574 communication requests. The teletype service handled a total of 237,010 messages.

## RADIO

A new radio system employing selective calling techniques has been installed in the Owen Sound District. This new system is comprised of 5 repeater/trunk terminal stations, 6 patrol yard stations and 40 mobile units. Radio coverage is 95 % complete and adequate signal levels obtained throughout.

The equipment is extensively transistorized and reliability is expected to be of high order. A complete survey of Ottawa District relative to a new radio system was conducted. Further radio tests were conducted in New Liskeard District with a view to extending radio coverage into the Gogama area and the Timmins-Sudbury highway. A decision was made to proceed with the radio system extension.

A radio propagation test was conducted in order to determine the location for a new radio/repeater relay station in the area of Dalton in the Sault Ste. Marie district. This new station is required in order to provide radio coverage on Highway 101 and from Dalton to Missinabie. Toronto District radio system has been modified by the installation of selective calling thus permitting both mobile operators and dispatcher to select individually, any of the repeater stations in the system as required. A similar type modification has also been approved for the Bancroft radio system.

Negotiations with the Department of Transport resulted in the assignment of a new pair of frequencies for the Port Hope radio system. The new frequencies will be made operational during the summer of 1968.

Use of Department radio towers at Guelph and Chappleau was granted to O.P.P. in order to overcome their radio coverage problems in these areas.

## TELEPHONE

Extensive telephone relocations were carried out in Huntsville District Office to accommodate office movements.

A large number of telephone system relocations and additions were effected within the Downsview complex in order to facilitate office and personnel movements.

Telephone system relocations were carried out in London Regional Office to suit section and personnel relocations.

A large number of telephone relocations were made in Lambeth garage (London District) to coincide with structural changes in the garage.

## TELETYPE

The teletype dictation service in the Downsview Teletype Centre was modified by the installation of new voice recording equipment using a magnetic belt as the recording medium.

## INTERCOM AND PUBLIC ADDRESS

An extensive intercom system was installed in the Whiteprint and Photographic areas in the Administration Building at Downsview.

A large public address system for the Sault Ste. Marie district garage was designed and installation is underway.



## ACCOMMODATION

The accommodation staff co-operated with the Department of Public Works and Department of Treasury in preparing the Ontario Government's "Long Range Accommodation Study". The operation of the Department at the Downsview location was a major part of the study. The continuing development of our Department required that additional leased office space be acquired at:

Fort William—1,100 square feet at 2606 Victoria Avenue to accommodate the Regional Engineering Audit Section. This group had previously been working out of the District repair garage.

North Bay —4,200 square feet at 237 Main Street East to accommodate Regional Engineering Surveys staff.

1,768 square feet at 195 First Avenue West to accommodate District Office operation.

350 square feet at 1221 Algonquin Avenue to house a new Diazzo Processor (Whiteprint machine).

Building extensions have been planned for District Offices at Stratford, Owen Sound and Bancroft. It is hoped that construction can start in the fall of 1968.

A housekeeping contract was prepared to maintain the Go-Transit System.

The construction of the Queen's Park complex saw the demolition of the old Surrey Place Garage. Accommodation staff arranged and supervised the move of the government garage operation to new quarters at 881 Bay St.

At Downsview, work on the extension to the Central Regional building is well under way. Occupancy of the building scheduled for September 1968, will provide the Department with approximately 14,000 square feet of office space and an 8,000 square feet storage area. The installation of a 360/65 computer system at Downsview required the complete re-design and expansion of the Electronic Computing Branch machine room. The new system now enjoys the complete environmental control necessary for its operation.

A complete space analysis of the Downsview Laboratory facilities was conducted. The results indicated that approximately 11,000 square feet is required for the Lab operation. It is hoped that the pending relocation of the Department of Lands and Forests now at Downsview will release some of the required space.

Accommodation staff completed an evaluation study of D.H.O. construction camps in the Fort William District. A report was submitted indicating that some improvement was desired. Office signs are being prepared for all District and Regional Offices. The anticipated economies of this system are now quite apparent.

## BUILDINGS

Under arrangements with the Department of Public Works and Treasury Board, twenty-six salt sheds and two temporary patrol offices were constructed under the supervision of the Section.

For the protection of the Department's sand-salt stockpiles, three "Dome" structures were constructed; a 100 foot diameter at Marysville, 80 foot diameter at Barrys Bay and a 52 foot diameter at Chatsworth.



During the year, construction of twenty-five metal patrol garages were undertaken and the first phase of a masonry addition to the Owen Sound District's stockroom was completed.

An addition to the Bailey Bridge Building at North Bay was completed and a new furnace was installed.

The generator plant and building at Foleyet was dismantled, moved and rebuilt at Savant Lake. Three faulty heating systems were replaced in patrol garages and thirty-five overhead doors were replaced with new fibreglass installations.

Ten new patrol sites were established and partially developed.

Our yearly submission to the Department of Public Works and Treasury Board for new buildings contained eighteen projects in order of priority. In March and April of 1968, Treasury Board approved for planning the top eight projects and we commenced compilation of our detailed requirements on these projects for transmission to the Department of Public Works.

## **SUPPLY SECTION**

**R. W. Rawlings, Superintendent**

The Supply Section buys most of the construction and maintenance requirements of the Department. Selected items are furnished by contractors, and some operating supplies are purchased from local suppliers by District Offices.

The Purchasing group, each year, orders goods to a value exceeding 30 million dollars. Term supply contracts are extensively used to establish sources of supply for a period at fixed prices. The most significant values of term contracts are the savings in accounting and paper work. Virtually all purchasing is done on a competitive tendering system whereby all suppliers capable of producing satisfactory products are given the opportunity to tender on Department requirements.

A wide range of maintenance and construction materials are distributed from Central Stores at Downsview. This warehouse provides an overnight delivery service to Districts on most materials, and through bulk buying assures an adequate supply of high quality goods at minimum cost. Annual shipments from Central Stores approximate 2½ million dollars.

A complete Bailey Bridge rehabilitation and supply service is provided by Central Stores. Various special products and emergency supplies of reinforcing steel are fabricated at the new facilities completed in 1967.

Disposal of all Department used equipment and materials is handled by the Material Control unit of the Supply Section. Most used equipment is sold at public auction, and scrap materials by sealed tender. Revenue from the sale of used equipment and scrap materials totals about \$350,000 per year. A continuing effort is made to transfer surplus materials from one District to another.

## **TENDERS SECTION**

**R. J. Barnes, Manager**

The Tenders Section processes all tenders on Engineering Projects, Supply Contracts, Obsolete Equipment, Material Sales, Property Sales, Well Drilling Contracts, Photography Contracts and Special Services Projects.

The Section arranges formal public openings of tenders on all Engineering Projects and provides for public attendance at all other tender openings. During the 1967-68 fiscal year over 2,200 Contractors and Suppliers attended tender openings handled by the Tenders Section.

This Section distributes all informational tender forms and tendering material and maintains a register of contractors and suppliers.

The Tenders Section advertises all lettings of contracts, auction sales, expropriation notices, supply contracts, sales of obsolete equipment and material sales. This includes requirements for Districts and Sections. The Section also processes all advertising accounts.

The Section collects the fees for tendering material and for sales of the manual on General Condition and Standard Specifications of the Contract and does the accounting for these transactions.

The Section Manager or his assistant acts as secretary at the weekly meetings of the Property Approval Committee.

During the 1967-68 fiscal year, the Tenders Section issued approximately 1,660 advertising orders for 2,283 advertisements. Total cost of advertising was \$72,097.

Tenders were called as follows:—

(a) ENGINEERING CONTRACTS	
Contracts processed .....	350
Contracts awarded .....	333
Tendering material released (plans, profiles, etc.) .....	3,813
Tendering material released (tender forms only) .....	6,496
Net tenders processed .....	1,641
Average number of bids per contract .....	4.69
(b) ENGINEERING CONTRACTS	
Invitation Bids (Contracts less than \$10,000.00 in value)	
Invitation contracts processed .....	35
Tendering material released .....	325
Net tenders processed .....	102
Average number of bids per invitation contract .....	2.91
(c) SPECIAL SERVICES CONTRACTS	
Invitation Bids (Contracts less than \$10,000.00 in value)	
Invitation contracts processed .....	134
Tendering material released .....	1,539
Net tenders processed .....	421
Average number of bids per invitation contract .....	3.14
(d) PROPERTY SALE TRANSACTIONS	
(Public Tender)	
Sales processed .....	54
Net tenders processed .....	178
Average number of bids per sale .....	3.30
(e) MATERIAL REQUIREMENTS	
Supply contracts and enquiries processed .....	2,959
Net tenders processed .....	13,366
Average number of bids .....	4.52
(f) OBSOLETE MATERIAL SALES	
Number of sales processed .....	47
Net number of tenders processed .....	168
Average number of bids per sale .....	3.57

(g) WELL DRILLING CONTRACTS	
Number of contracts processed .....	19
Net number of tenders processed .....	29
Average number of bids per contract .....	1.53
(h) PHOTOGRAPHY CONTRACTS	
Number of contracts processed .....	2
Net number of tenders processed .....	8
Average number of bids per contract .....	4.00
TOTAL EXPENDITURE .....	\$121,941
GROSS REVENUE (sale of tendering material) .....	30,830
REFUNDS .....	440
NET REVENUE (sale of tendering material) .....	30,390
GROSS REVENUE (sale of specification manual) .....	3,387
REFUNDS .....	Nil
NET REVENUE (sale of specification manual) .....	3,387
TOTAL NET REVENUE (all items) .....	33,777

## RIGHT-OF-WAY DIVISION

### LAND SURVEYS SECTION

**W. D. Ratz, O.L.S., P.Eng., Superintendent**

The Land Surveys Section develops and formulates policies and procedures for legal land surveys, plan preparation and registration, and associated functions affecting the surveying organization of the five regional offices which form an integral part of the Right-of-Way Division.

In addition to preparing all recommendations for Orders-in-Council necessary for the designations, closings, reversions or transfers of highways, the Section, by review, maintains a uniform surveying and drafting operation in the regions; develops and co-ordinates new electronic computing procedures; directs control surveys; and provides professional and technical guidance to the regional staff.

Through the regional offices, registration was obtained for 1,868 plans in the registry and land titles offices during the fiscal year.

The following table outlines the various types of plans prepared by the regional land surveys units. The plans are listed by type and grouped according to function. Included in the table are the number of plans and the total mileage of each type.

During the fiscal year 76.48 miles of highway were designated as controlled-access highways. This figure includes the designation of:

1. St. Mary's By-Pass
2. Dunnville Diversion
3. Communication Road
4. County Road 9 (Carleton County)
5. New Highway 40 (Wallaceburg to Sarnia)
6. Gravenhurst By-Pass
7. Chedoke Expressway



The total mileage of controlled-access highways in the province now stands at 1911.07. The designation as a controlled-access highway, of the Stoney Creek Expressway, with a mileage of 1.28 miles, was revoked.

The Land Surveys Section conducted one training course for field personnel during the year. The course was attended by 24 candidates. Land Surveys qualifying examinations for field and drafting staff were tried by 205 candidates of whom 129 passed and 14 passed with supplementals. The apprentice program for Ontario Land Surveyors is being continued by this Section and during the year two apprentices passed the final Part 1 examinations.

Co-ordinate control surveys are in progress on sections of highways throughout the Province. This survey operation employs electronic survey instruments capable of measuring within a fraction of an inch any distance from 50 feet to several miles, and a transit which allows direct reading on angular measurements to one second.

By continued co-operation with Topographical Surveys, Department of Energy, Mines and Resources, Ottawa, additional nets of control monuments with geodetic values have been established on Highway 401 between London and Windsor and in the Niagara Peninsula. These monuments are linked to the existing Toronto-Hamilton networks and will provide a basis for co-ordinate control surveys which have proved beneficial to the Department.

Appendices to this report give details of controlled-access highway designations and assumptions, designations, reversions and transfers of sections of the King's Highway, Secondary highways and Tertiary road systems.

## PROPERTY SECTION

**R. W. Bond, Superintendent**

The Property Section acquires property and property rights required for highway purposes, and settles claims arising from such acquisition. It also manages and disposes of land and buildings surplus to highway requirements.

During the year, 4,210 new agreements were negotiated. The 1,263 unpaid agreements carried-over from the previous year when added to the number of new agreements made a total of 5,473 to be paid. Of this total, 4,472 were paid, the value being \$19,041,536. In additional, expenditures on the Kitchener-Waterloo, E. C. Row and Lakehead Expressways of \$1,955,218 raised the amount to \$20,996,755. At the close of the fiscal year, there were 4,155 property owners with whom agreements had not been negotiated compared to 4,050 at the same time last year. Requests to purchase property involving 4,171 new owners were received during the year compared to property requests involving 4,784 owners in the previous fiscal year.

The purchase of property for the Macdonald-Cartier Freeway (Highway 401) Windsor to Quebec border, exclusive of the current widening project between Highways 48 and 27, has involved a total of 5,427 owners to date. Negotiated agreements total 5,403. Twenty-four are still unsettled.

The purchase of property for the widening of the Macdonald-Cartier Freeway (Highway 401) from Highways 48 to 27 continues. A total of 36 properties including one building was purchased during the fiscal year, the expenditures involved being



\$610,914. To date 622 properties, including 245 buildings, have been purchased at a cost of \$11,285,444.

A total of 231 buildings have been removed or demolished by the methods indicated below:

1. Invitation Tender .....	132
2. Public Auction .....	57
3. Demolition by Highway Contractor .....	13
4. Public Tender .....	21
5. Demolished under agreement .....	2
6. Direct Sale .....	6

When negotiations to acquire property reach an impasse, the property owner or the Department have the privilege of applying to the Board of Negotiation for a hearing. This hearing is informal and although the Board's recommendations are not binding on either party, 144 settlements have been secured out of 227 cases referred since November, 1965.

Twenty-three applications were made to the Ontario Municipal Board for determination of compensation which added to carry-over of 35 making a total of 58, categorized as follows:

1. Appointments heard and awards made .....	15
2. Appointments heard and judgement reserved .....	1
3. Settlements made, applications or appointments cancelled .....	8
4. Appointments not yet heard .....	7
5. Applications for which appointments not yet given .....	27
Total .....	58

Before purchase, all properties were appraised by D.H.O. appraisers. In addition, 316 appraisals were completed by independent fee appraisers.

At the close of the fiscal year, 2,861 properties, which were recorded as surplus to D.H.O. requirements, were under various stages of processing for disposal. Revenue from the sale of surplus property totalled \$288,499 and revenue from leased properties amounted to \$316,756.

## REGIONAL SERVICES MANAGERS SECTION

Each Regional Services Manager reported directly to the Director of Services on the activities of the property acquisition, land surveying and administrative groups in his Region.

Following is a list of Regional Services Managers and the Region to which each was assigned.

1. D. F. Walton .....	South-western
2. H. Aron .....	Eastern
3. M. W. Robinson .....	Central
4. D. W. Baird .....	Northern
5. A. E. Lodge .....	North-western

CONSTRUCTION OF TRANS-CANADA HIGHWAY

Including the Lakehead Expressway — 1967-1968

T. C. MUIR, P.Eng., Contract Control Engineer

Construction work on the Trans-Canada Highway progressed at about the same rate as last year.

Grading completed this year was approximately 34 miles as compared with 22 miles the previous year. Paving completed this year was approximately 23 miles as compared to 33 miles the previous year. Four new structures were completed, the same number as last year.

In the Kingston District the granular base and paving of the Madoc-By-Pass was completed.

In the Sault Ste. Marie District construction from 19 miles north of Highway 563 northerly for 11.13 miles was completed. Construction was also completed from Bruce Mines west limits westerly for 6.55 miles.

In the Fort William District, construction from 23.60 miles west of English River to Ignace was completed as was construction from 10.30 miles east of Port Arthur city limits easterly for 3.12 miles. Construction from 1.80 miles west of Savanne westerly to 1 mile east of Upsala, 11.20 miles, began and will be completed in 1968.

On the Lakehead Expressway construction from Highway 130 north to Highway 17A, 2.63 miles was completed. Construction from Highway 17A easterly to Tertiary Road 800, 6.85 miles and from junction of Highway 61 north to junction of Highway 17, 3.55 miles was begun and will be completed in 1968.

The total work on Trans-Canada Highway completed to the end of the year was:

Grading and Culverts .....	1,306.55 miles
Bituminous Hot Mix Pavement .....	1,218.15 miles
Permanent Bridges and Structures Built .....	180

GRADING AND CULVERTS

DISTRICT	Hwy.	LOCATION	TOTAL	COMPL. PREV. YEAR	COMPL. THIS YEAR
Sault Ste. Marie	17	From 19 mi. north of Hwy. 563 northerly	11.13	—	11.13
Sault Ste. Marie	17	From Bruce Mines west limits westerly ..	6.55	—	6.55
Fort William	17	23.6 mi. west of English River to Ignace ..	11.10	8.50	2.60
Fort William	17	10.3 mi. east of Port Arthur City limits			
		easterly 3.12 mi. ....	3.12	1.50	1.62
Fort William	17	1.8 mi. west of Savanne westerly to			
		1.0 mi. east of Upsala .....	11.20	—	6.00
Fort William	L.H.E.	From Hwy. 130 north to Hwy. 17A	2.63	2.20	0.43
Fort William	L.H.E.	From Hwy. 17A easterly to Tertiary			
		Rd. 800 .....	6.85	—	5.80
Fort William	L.H.E.	From Jct. Hwy. 61 north to Jct. Hwy. 17	3.55	—	0.60
TOTALS .....			56.13	12.20	34.73

## BITUMINOUS HOT MIX

Kingston	7	Madoc-By-Pass .....	3.52	—	3.52
Sault Ste. Marie	17	From 19 mi. north of Hwy. 563 northerly ..	11.13	—	11.13
Sault Ste. Marie	17	From Bruce Mines west limits westerly ..	6.55	—	6.55
Fort William	17	23.6 mi. west of English River to Ignace ..	11.10	4.70	6.40
Fort William	17	10.3 mi. east of Port Arthur City limits			
		easterly 3.12 mi. ....	3.12	0.60	2.52
Fort William	L.H.E.	From Hwy. 130 north to Hwy. 17A .....	2.63	0.30	2.33
Fort William	L.H.E.	From Jct. Hwy. 61 north to Jct. Hwy. 17 ..	3.55	—	0.57
TOTALS .....			41.60	5.60	33.02

## GRANULAR BASE (NEW GRADING)

Kingston	7	Madoc-By-Pass .....	3.52	—	3.52
Sault Ste. Marie	17	From 19 mi. north of Hwy. 563 northerly ..	11.13	4.00	7.13
Sault Ste. Marie	17	From Bruce Mines west limits westerly ..	6.55	—	6.55
Fort William	17	10.3 mi. east of Porth Arthur City limits			
		easterly .....	3.12	1.50	1.62
Fort William	17	1.8 mi. west of Savanne westerly to			
		1 mi. east of Upsala .....	11.20	—	6.00
Fort William	17	23.6 mi. west of English River to Ignace ..	11.10	8.50	2.60
Fort William	L.H.E.	From Jct. Hwy. 130 north to Hwy. 17A ..	2.63	2.20	0.43
Fort William	L.H.E.	From Jct. Hwy. 17A easterly to Tertiary			
		Rd. 800 .....	6.85	—	5.80
TOTALS .....			56.10	16.20	33.65

L.H.E. — Lakehead Expressway.

## NEW BRIDGES

Kingston	7	Deer Creek			
Kingston	7	Madoc Creek			
Sault Ste. Marie	17	Stoby Creek			
Fort William	17	Mackenzie River			
TOTAL — 4 new bridges.					

## MINING, ACCESS AND RESOURCES ROADS REPORT, 1967-68

T. C. MUIR, P.Eng., Secretary

Mining and Access Roads Committee (Interdepartmental)

The Mining and Access Roads Committee consisting of the Treasurer of Ontario, and Ministers of the following Departments: Highways, Lands and Forests, Mines, Municipal Affairs and the Minister without Portfolio, administers a fund which is voted by the Legislature in the Department of Mines estimate for carrying out works under the Roads-to-Resources programme and under the Mining Assistance programme of the Department of Mines.

Toward the end of this fiscal year the Mining and Access Roads Committee was dissolved and a new Committee was installed to be known as the Northern Ontario Roads to Resources Committee and would comprise the Ministers and Deputy Ministers of Highways, Lands and Forests, Mines, Tourism and Information, Trade and Development, Transport, and Treasury.

The Roads-to-Resources programme was carried out under an Agreement between the Federal Government and the Province of Ontario, and under the Agreement, the Department of Highways, Ontario, acting as an agent for the Ontario

Government, designed and supervised this programme. This Agreement provided for an amount of \$15,000,000 to be expended by March 31st, 1967, and these costs were shared between the Federal Government and the Provincial Government on an approximately \$7,500,000 each basis. In cases, however, wherein a private enterprise directly benefitted, the costs of the work involved would be shared between the two Governments and the private company concerned. The original Agreement terminated March 31st, 1967, but later in the year 1967, the Federal Government granted an extension to permit a total expenditure of \$7,500,000 as the Federal Government's share.

The following was accomplished this year:

#### NORTH BAY DISTRICT

##### Mining Assistance Road:

Through the mining assistance fund provided by the Department of Mines for the construction of mining access roads on a shareability basis with the mining corporation concerned, last year three miles of paving was completed on the access road into the extensive Cleveland Cliffs of Canada-Sherman Mine.

#### SAULT STE. MARIE DISTRICT

##### Mining Assistance Road:

Through the mining assistance fund provided by the Department of Mines that Department contributed approximately \$8,500 this year towards the costs of construction and reconstruction of the 17 mile access road into the Tribag Mining Company operation.

#### FORT WILLIAM DISTRICT

##### Resource Road — Central Patricia northerly:

This road was a project under the Roads-to-Resources Agreement and during this fiscal year construction progressed at a satisfactory rate to a point some 70 miles north-west of Central Patricia. The work during 1967 encompassed a total of approximately 30 miles of right-of-way clearing of which 15 miles were graded for vehicular traffic. This road was built through excellent roadbuilding terrain resulting in economical construction.

#### NEW LISKEARD DISTRICT

Under the Department of Highways Capital Construction programme grading was completed on Highway 576 from 3.40 miles north of Highway 101 to 7.90 miles north of Highway 101. Hot Mix Paving was completed from Highway 101 northerly to Kam Kotia Mine for a total length of 15.5 miles.

#### KENORA DISTRICT

##### Mining Assistance Road:

Work was commenced February 26th, 1968, on a Mining Access road northerly from Balmertown with a contract for Clearing of the right-of-way for a distance of 9.06 miles.



**RESOURCES ROADS AS CONSTRUCTED TO THE  
TERMINATION DATE OF THE  
FEDERAL-PROVINCIAL ROADS-TO-RESOURCES AGREEMENT**

Financed partially by the Province under the  
Federal-Provincial Roads-to-Resources Agreement

DISTRICT	LOCATION	YEAR BEGUN	TOTAL MILES	MILES COMPL.
New Liskeard	Foleyet west .....	1958	34.0	34.0
Sudbury	Flack Lake Road .....	1963	38.0	10.5*
Sault Ste. Marie	Chapleau east .....	1958	26.0	26.0
Fort William	Nakina to Terrier Lake .....	1959	47.0	47.0
	Savant Lake to Hwy. 17 .....	1959	79.6	79.6
	Hwy. 17 to vicinity of Cheeseman Lake .....	1959	74.5	74.5
	Central Patricia northerly to 10 mi. north of Otoskwin River .....	1962	47.0	47.0
Kenora	Minaki south .....	1959	21.5	21.5
	TOTALS .....		367.6	340.1

\*Clearing of Right-of-Way only.

**MINING AND ACCESS ROADS 1967-68**

Owing to the termination of the Roads-to-Resources Agreement between the Province of Ontario and the Federal Government upon the reaching of the \$7,500,000 share by the Federal Government, work was carried out under the Department of Mines' vote on two projects — (1) 10 miles north of the Otoskwin River Northerly being a part of the Central Patria northerly road (2) on the connection from the terminus of Tertiary Road 800 northeasterly toward the Armstrong-Hurkett road.

These two projects form part of the non-shareable program of the Northern Ontario Roads to Resources Committee and amounted to \$49,860.

Also, during this fiscal year, the Department of Mines through the administration of the Northern Ontario Roads to Resources Committee contributed \$155,744 toward the cost of construction of access roads for the following companies: Agnew Lake Mines Limited, Upper Canada Mines Limited, Cliffs of Canada Limited — Sherman Mine, Thunder Bay Amethyst Mining Company Limited and the Tribag Mining Company Limited.

This made the total financial contribution by the Department of Mines for this fiscal year \$215,604 and this contribution was 74% over the similar contribution for the previous fiscal year 1966-67.

**CONTRACT WORK FOR 1967-68**

**T. C. MUIR, P.Eng., Contract Control Engineer**

During 1967-68 Capital construction contracts were completed on 486 miles of grading, 615 miles of hot mix paving, 30 miles of concrete paving, and 79 structures with 236 capital contracts being completed along with 168 maintenance contracts.

In the fiscal year 1967-68, 183 Capital construction contracts and 150 Mainte-

nance contracts were awarded and this new capital work covered 200 miles of grading, 70 miles of hot mix paving, 408 miles of grading and hot mix paving and 72 structures of various types.

The Department of Highways through its qualification procedures imposed further penalties against the contractors who did not perform work in accordance with the Department's procedures and this year the total number of penalties imposed to date since the inception of the procedures are 195 warning letters and 144 reductions in the contractors' qualification ratings. These warning letters and reductions would be the result of the short-comings of the contractor relative to administration, quality of work, public relations, adherence to regulations and specifications and, finally, conditions and sufficiency of equipment. In respect to the total monetary value of all the contracts awarded this year the qualification procedures were applicable to approximately 95 per cent of the total value of the contracts awarded.

The application of liquidated damages in the Department's contracts have proven a very efficient medium toward having contracts finished within the completion date of the contract, and therefore, these liquidated damages have been installed in over 95 per cent of all the contracts advertised this year.

There are occasions when the urgency does not permit a normal period for advertising and full scale pre-engineering, and in such instances, the Department resorts to an invitation bid procedure and these contracts are of a relatively small tender value but the preparation of the tender and the tendering procedures are identical to the normal publicly advertised contracts. The number of contracts under the Invitation procedure this year was 35 of which 33 were awarded.

The Contract Control section performs the function of preparing tenders and arranging for the closing of tenders for those contracts coming under the jurisdiction of the Special Services section of the Services Branch. These contracts would apply to such operations as plumbing, heating, ventilation, electrical work, garage doors, salt shed erection and patrol garage construction. The invitation bid procedure is adopted in such contracts since the nature of the work is highly specialized and the Department has a complete roster of such specialists and also many local contractors in small centres at or near the sites of construction are quite capable of carrying out the work in this type and therefore these people are invited in large numbers to bid on these relatively small and localized projects. In this case, therefore, the invitation bid principle best serves the purpose both of the Department and the small local contractors, and for the Special Services section this year the Contract office prepared and processed some 129 of which 110 were awarded.

# **TYPES OF WORK** **Contracts Awarded 1967-68**

## MAINTENANCE

	TOTAL
Prime dust layer .....	8
Crushed gravel (including 10 capital contracts) .....	48
Hot mix patching .....	24
Surface treatment .....	8
Winter sanding .....	15
Screened sand .....	20
Bridge painting .....	10
Calcium chloride apply .....	8
Resurfacing .....	7
Mowing and Freeway .....	10
Miscellaneous .....	1
<b>TOTAL</b> .....	<b>159</b>

## CONSTRUCTION

Concrete paving .....	2
Grading and hot mix paving (67 structures included) .....	34
Grading and culverts .....	70
Hot mix paving .....	9
Structures .....	5
Miscellaneous .....	54
<b>TOTAL</b> .....	<b>174</b>
<b>GRAND TOTAL — MAINTENANCE, CONSTRUCTION</b> .....	<b>333</b>

## APPENDIX No. 1

**Department Expenditures on King's Highways, Secondary Highways, Tertiary Roads,  
Access and Industrial Roads, Connecting Links, Development Roads, Roads in  
Unincorporated Townships by County and Territorial District**

**April 1, 1967 to March 31, 1968**

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>BRANT:</b>			
Highway 2 .....	\$1,042,116	\$ 103,804	\$1,145,920
" 5 .....	254	53,922	54,176
" 24 .....	833,067	59,123	892,190
" 24A .....	135,389	17,489	152,878
" 53 .....	11,833	56,238	68,071
" 54 .....	19,897	62,808	82,705
" 99 .....	519	15,469	15,988
" 403 .....	66,350	32,428	98,778
Connecting Links:			
City of Brantford .....	202,439	—	202,439
Town of Paris .....	77,923	432	78,355
Development Roads .....	378,572	—	378,572
	<u>\$2,768,359</u>	<u>\$ 401,713</u>	<u>\$3,170,072</u>
<b>BRUCE:</b>			
Highway 4 .....	\$ 97,879	\$ 82,003	\$ 179,882
" 6 .....	179,068	152,766	331,834
" 9 .....	21,251	91,013	112,264
" 21 .....	41,871	159,050	200,921
" 86 .....	1,559	27,343	28,902
Connecting Links:			
Town of Kincardine .....	7,879	2,506	10,385
Town of Port Elgin .....	—	2,451	2,451
Town of Southampton .....	—	1,844	1,844
Town of Walkerton .....	—	3,698	3,698
Town of Wiarton .....	—	1,284	1,284
Village of Lucknow .....	136,451	1,642	138,093
Village of Mildmay .....	—	34	34
Village of Teeswater .....	—	171	171
Development Roads .....	300,858	—	300,858
Lands and Buildings .....	13,487	1,923	15,410
	<u>\$ 800,303</u>	<u>\$ 527,728</u>	<u>\$1,328,031</u>
<b>CARLETON:</b>			
Highway 7 .....	\$1,110,317	\$ 64,826	\$1,175,143
" 16 .....	1,028,936	96,643	1,125,579
" 17 .....	2,529,083	175,538	2,704,621
" 29 .....	—	7,921	7,921
" 31 .....	24,271	69,352	93,623
" 44 .....	239	12,374	12,613
" 416 .....	392,435	—	392,435
" 417 .....	495,086	—	495,086
Other Programs:			
Ottawa Queensway .....	683,672	243,701	927,373
MacDonald-Cartier Bridge (Ottawa) ..	71,823	—	71,823
Sidewalks .....	13,747	—	13,747



COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>CARLETON (Cont'd)</b>			
Connecting Link:			
City of Ottawa .....	294,797	—	294,797
Development Roads .....	425,003	—	425,003
Lands and Buildings .....	3,648	10,727	14,375
Miscellaneous Surveys .....	132	—	132
	<u>\$7,073,189</u>	<u>\$ 681,082</u>	<u>\$7,754,271</u>
<b>DUFFERIN:</b>			
Highway 9 .....	\$ 162,473	\$ 65,994	\$ 228,467
" 10 .....	74,476	79,229	153,705
" 24 .....	13,844	38,058	51,902
" 89 .....	3,724	52,473	56,197
" 104 .....	3,900	7,412	11,312
" 136 .....	257	2,113	2,370
Connecting Links:			
Town of Orangeville .....	—	7,331	7,331
Village of Shelburne .....	488,683	331	489,014
Development Roads .....	27,271	—	27,271
Lands and Buildings .....	3,777	291	4,068
	<u>\$ 778,405</u>	<u>\$ 253,232</u>	<u>\$1,031,637</u>
<b>ELGIN:</b>			
Highway 3 .....	\$ 24,531	\$ 169,873	\$ 194,404
" 4 .....	230,310	118,305	348,615
" 19 .....	4,320	49,772	54,092
" 73 .....	12,748	38,160	50,908
" 74 .....	370	17,067	17,437
" 76 .....	225	19,181	19,406
" 126 .....	920	—	920
" 401 (M.-C.F.) .....	932,699	141,301	1,074,000
Connecting Links:			
Town of Aylmer .....	65,344	4,107	69,451
Village of Belmont .....	330	801	1,131
Village of Port Burwell .....	—	1,925	1,925
Development Roads .....	904,569	—	904,569
Lands and Buildings .....	—	688	688
	<u>\$2,176,366</u>	<u>\$ 561,180</u>	<u>\$2,737,546</u>
<b>ESSEX:</b>			
Highway 2 .....	\$ 15,582	\$ 67,466	\$ 83,048
" 3 .....	146,843	127,149	273,992
" 3B. ....	—	1,755	1,755
" 18 .....	18,866	98,059	116,925
" 18A. ....	16,397	38,630	55,027
" 39 .....	228	22,400	22,628
" 77 .....	21,016	25,539	46,555
" 98 .....	17,522	72,167	89,689
" 107 .....	—	1,340	1,340
" 114 .....	—	2,039	2,039
" 401 (M.-C.F.) .....	1,313,520	121,204	1,434,724
Other Program:			
E. C. Row Expressway (Windsor) .....	119,195	—	119,195

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
ESSEX (Cont'd)			
Connecting Links:			
Town of Amherstburg .....	—	836	836
Town of Essex .....	—	845	845
Town of Harrow .....	—	385	385
Town of Kingsville .....	—	776	776
Town of Leamington .....	—	930	930
Village of Belle River .....	—	1,347	1,347
Lands and Buildings .....	12,260	1,492	13,752
Miscellaneous Surveys .....	1,621	—	1,621
	<u>\$1,683,050</u>	<u>\$ 584,359</u>	<u>\$2,267,409</u>

## FRONTENAC:

Highway 2 .....	\$ 359,163	\$ 83,486	\$ 442,649
" 7 .....	5,305	84,778	90,083
" 15 .....	7,227	73,674	80,901
" 33 .....	13,227	17,202	30,429
" 38 .....	448,312	123,220	571,532
" 41 .....	396,453	18,525	414,978
" 95 .....	4,952	17,716	22,668
" 96 .....	2,205	86,673	88,878
" 401 (M.-C.F.) .....	351,751	181,282	533,033
Sec. Hwy. 506 .....	232,439	58,415	290,854
" " 509 .....	22,850	31,549	54,399
Sidewalks .....	1,076	—	1,076
Connecting Link:			
City of Kingston .....	122,235	—	122,235
Development Roads .....	1,893,907	32,400	1,926,307
Ferries .....	29,013	429,434	458,447
Lands and Buildings .....	13,837	8,328	22,165
	<u>\$3,903,952</u>	<u>\$1,246,682</u>	<u>\$5,150,634</u>

## GREY:

Highway 4 .....	\$ 198,442	\$ 97,062	\$ 295,504
" 6 .....	101,864	176,351	278,215
" 10 .....	307,276	131,845	439,121
" 24 .....	216	11,163	11,379
" 26 .....	128,832	119,638	248,470
" 70 .....	1,779	24,971	26,750
" 89 .....	10,058	28,521	38,579
Connecting Links:			
Town of Durham .....	43,875	2,971	46,846
Town of Hanover .....	176,773	836	177,609
Town of Meaford .....	114,373	1,704	116,077
Town of Thornbury .....	24,374	681	25,055
Village of Chatsworth .....	—	1,140	1,140
Village of Flesherton .....	—	81	81
Village of Markdale .....	—	61	61
Development Roads .....	1,273,974	—	1,273,974
Lands and Buildings .....	63,983	5,850	69,833
	<u>\$2,445,819</u>	<u>\$ 602,875</u>	<u>\$3,048,694</u>

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>HALDIMAND:</b>			
Highway 3.....	\$ 210,924	\$ 197,098	\$ 408,022
“ 6.....	26,690	89,024	115,714
“ 54.....	7,556	63,915	71,471
“ 56.....	1,528	30,448	31,976
Connecting Links:			
Town of Caledonia .....	386,227	4,855	391,082
Town of Dunnville .....	—	2,740	2,740
Village of Cayuga .....	—	1,455	1,455
Village of Hagersville .....	—	2,104	2,104
Development Roads .....	24,330	—	24,330
Lands and Buildings .....	19,286	851	20,137
Weigh Scales .....	—	483	483
Miscellaneous Surveys .....	3,558	—	3,558
	<hr/> \$ 680,099	<hr/> \$ 392,973	<hr/> \$1,073,072
<b>HALTON:</b>			
Highway 2 .....	\$ 35,513	\$ 130,321	\$ 165,834
“ 5.....	13,325	113,608	126,933
“ 6 .....	12,944	10,575	23,519
“ 7.....	22,490	58,848	81,338
“ 25.....	45,293	294,320	339,613
“ 122.....	1,478	32,029	33,507
“ 401 (M.-C.F.).....	26,202	176,538	202,740
“ 403.....	288,356	71,154	359,510
Queen Elizabeth Way .....	423,833	317,070	740,903
Connecting Links:			
Town of Acton .....	5,682	3,684	9,366
Town of Burlington .....	—	524	524
Town of Georgetown .....	—	4,149	4,149
Town of Milton .....	1,426	2,432	3,858
Town of Oakville .....	35,490	—	35,490
Lands and Buildings .....	7,444	15,569	23,013
	<hr/> \$ 919,476	<hr/> \$1,230,821	<hr/> \$2,150,297
<b>HASTINGS:</b>			
Highway 2 .....	\$ 434,347	\$ 94,825	\$ 529,172
“ 7 .....	470,661	90,874	561,535
“ 14.....	24,082	82,679	106,761
“ 28.....	120	42,171	42,291
“ 33.....	79,019	38,814	117,833
“ 37.....	554,018	76,723	630,741
“ 49.....	237,852	4,029	241,881
“ 62.....	1,300,513	264,953	1,565,466
“ 121.....	—	6,920	6,920
“ 127.....	47,681	29,766	77,447
“ 401 (M.-C.F.) .....	97,316	174,388	271,704
Sec. Hwy. 500 .....	163,246	72,317	235,563
“ “ 502 .....	1,496	5,643	7,139
“ “ 504 .....	—	878	878
“ “ 517.....	—	10,729	10,729
“ “ 620 .....	59,602	33,485	93,087
Connecting Links:			
City of Belleville .....	72,245	—	72,245
Town of Trenton .....	430,874	—	430,874
Town of Desoronto .....	—	477	477
Village of Bancroft .....	289,003	4,308	293,311
Village of Frankford .....	11,841	231	12,072

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>HASTINGS (Cont'd)</b>			
Village of Madoc .....	21,234	501	21,735
Village of Marmora .....	—	575	575
Village of Stirling .....	—	644	644
Village of Tweed .....	20,402	547	20,949
Development Roads .....	1,610,882	45,739	1,656,621
Lands and Buildings .....	95,965	6,990	102,955
Miscellaneous Surveys .....	663	—	663
	<u>\$6,023,062</u>	<u>\$1,089,206</u>	<u>\$7,112,268</u>
<b>HURON:</b>			
Highway 4 .....	\$ 996,523	\$ 145,254	\$1,141,777
" 8 .....	17,347	96,274	113,621
" 9 .....	—	3,956	3,956
" 21 .....	22,493	180,104	202,597
" 23 .....	138	10,601	10,739
" 81 .....	2,420	12,694	15,114
" 83 .....	22,637	47,125	69,762
" 84 .....	6,436	39,538	45,974
" 86 .....	698,277	95,589	793,866
" 87 .....	12,534	69,369	81,903
Sidewalks .....	364	—	364
Connecting Links:			
Town of Clinton .....	10,127	1,409	11,536
Town of Exeter .....	7,711	2,160	9,871
Town of Goderich .....	115,858	2,710	118,568
Town of Seaforth .....	—	109	109
Town of Wingham .....	2,486	2,747	5,233
Development Roads .....	152,920	—	152,920
Lands and Buildings .....	109,646	2,380	112,026
	<u>\$2,177,917</u>	<u>\$ 712,019</u>	<u>\$2,889,936</u>
<b>KENT:</b>			
Highway 2 .....	\$ 23,900	\$ 108,159	\$ 132,059
" 3 .....	610,637	145,579	756,216
" 21 .....	8,890	49,675	58,565
" 40 .....	48,284	47,666	95,950
" 78 .....	5,828	14,747	20,575
" 79 .....	3,665	9,894	13,559
" 98 .....	724	71,857	72,581
" 401 (M.-C.F.) .....	40,827	161,121	201,948
Other Program:			
Communication Road .....	—	5,195	5,195
Connecting Links:			
City of Chatham .....	117,924	—	117,924
Town of Blenheim .....	27,498	950	28,448
Town of Bothwell .....	—	349	349
Town of Dresden .....	16,063	10,266	26,329
Town of Ridgetown .....	—	1,270	1,270
Town of Tilbury .....	—	348	348
Town of Wallaceburg .....	161,571	5,946	167,517
Village of Thamesville .....	—	573	573
Village of Wheatley .....	15,655	248	15,903
Development Roads .....	340	—	340
Lands and Buildings .....	4,092	2,502	6,594
Miscellaneous Surveys .....	32	—	32
	<u>\$1,085,930</u>	<u>\$ 636,345</u>	<u>\$1,722,275</u>



COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>LAMBTON:</b>			
Highway 7 .....	\$ 32,180	\$ 123,404	\$ 155,584
" 21 .....	895,495	110,479	1,005,974
" 22 .....	—	5,232	5,232
" 40 .....	94,338	73,033	167,371
" 79 .....	1,294	69,322	70,616
" 80 .....	172,933	43,380	216,313
" 81 .....	366	—	366
" 82 .....	1,291	15,957	17,248
" 402 .....	734,790	37,122	771,912
Connecting Links:			
City of Sarnia .....	17,720	—	17,720
Town of Forest .....	—	621	621
Village of Grand Bend .....	—	2,061	2,061
Village of Thedford .....	—	1,254	1,254
Village of Watford .....	—	592	592
Village of Wyoming .....	—	583	583
Development Roads .....	338,992	—	338,992
Lands and Buildings .....	58,172	1,834	60,006
	<u>\$2,347,571</u>	<u>\$ 484,874</u>	<u>\$2,832,445</u>
<b>LANARK:</b>			
Highway 7 .....	\$ 64,071	\$ 130,964	\$ 195,035
" 15 .....	2,200	46,497	48,697
" 29 .....	191,607	41,092	232,699
" 43 .....	9,448	59,663	69,111
" 44 .....	208	5,234	5,442
Sec. Hwy. 511 .....	11,598	19,473	31,071
Connecting Links:			
Town of Almonte .....	195,459	716	196,175
Town of Perth .....	33,682	—	33,682
Development Roads .....	1,315,230	—	1,315,230
Lands and Buildings .....	64,144	2,675	66,819
Weigh Scales .....	—	1,085	1,085
Miscellaneous Surveys .....	261	—	261
	<u>\$1,887,908</u>	<u>\$ 307,399</u>	<u>\$2,195,307</u>
<b>LEEDS &amp; GRENVILLE:</b>			
Highway 2 .....	\$ 7,997	\$ 209,468	\$ 217,465
" 2S .....	524	40,482	41,006
" 15 .....	72,567	125,183	197,750
" 16 .....	48,268	75,437	123,705
" 29 .....	23,881	75,711	99,592
" 32 .....	7,526	43,588	51,114
" 42 .....	414,752	90,407	505,159
" 43 .....	14,904	56,016	70,920
" 137 .....	—	11,551	11,551
" 401 (M.-C.F.) .....	5,977,484	306,897	6,284,381
" 416 .....	1,129	—	1,129
Connecting Links:			
City of Brockville .....	9,838	—	9,838
Town of Kemptville .....	—	504	504
Town of Prescott .....	69,012	—	69,012
Village of Athens .....	192	769	961
Village of Merrickville .....	19,768	755	20,523
Village of Westport .....	2,519	488	3,007
Development Roads .....	806,328	75,000	881,328

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
LEEDS & GRENVILLE (Cont'd)			
Lands and Buildings .....	22,462	3,464	25,926
Weigh Scales .....	3,610	—	3,610
	<u>\$7,502,761</u>	<u>\$1,115,720</u>	<u>\$8,618,481</u>
LENNOX & ADDINGTON:			
Highway 2 .....	\$ 1,317	\$ 77,123	\$ 78,440
“ 7 .....	238	29,098	29,336
“ 33 .....	13,749	78,403	92,152
“ 41 .....	1,120,381	195,740	1,316,121
“ 133 .....	27,500	13,539	41,039
“ 401 (M.-C.F.) .....	4,644	163,269	167,913
Sec. Hwy. 500 .....	236	21,812	22,048
“ “ 502 .....	5,213	13,991	19,204
Connecting Links:			
Town of Napanee .....	—	142	142
Village of Bath .....	—	380	380
Development Roads .....	229,761	—	229,761
Ferries .....	459	118,876	119,335
Lands and Buildings .....	20,322	3,189	23,511
	<u>\$1,423,820</u>	<u>\$ 715,562</u>	<u>\$2,139,382</u>
LINCOLN:			
Highway 8 .....	\$ 378,968	\$ 114,680	\$ 493,648
“ 8A .....	140	14,175	14,315
“ 20 .....	3,944	121,770	125,714
“ 57 .....	171	9,638	9,809
“ 405 .....	10,518	32,052	42,570
“ 406 .....	101,903	26,269	128,172
Queen Elizabeth Way .....	1,239,688	589,360	1,829,048
Other Program:			
Carleton St. Tunnel (St. Catharines) ....	68,971	—	68,971
Sidewalks .....	577	—	577
Connecting Links:			
City of St. Catharines .....	159,386	—	159,386
Town of Beamsville .....	—	1,819	1,819
Town of Grimsby .....	—	12,703	12,703
Development Roads .....	269,194	—	269,194
Lands and Buildings .....	4,502	8,484	12,986
Miscellaneous Surveys .....	5,512	—	5,512
	<u>\$2,243,474</u>	<u>\$ 930,950</u>	<u>\$3,174,424</u>
MIDDLESEX:			
Highway 2 .....	\$ 39,552	\$ 150,819	\$ 190,371
“ 4 .....	429,216	77,459	506,675
“ 7 .....	151,289	100,383	251,672
“ 22 .....	16,575	62,850	79,425
“ 23 .....	285	18,429	18,714
“ 73 .....	158	12,949	13,107
“ 74 .....	794,171	13,315	807,486
“ 76 .....	—	2,558	2,558
“ 80 .....	2,512	37,697	40,209
“ 81 .....	418,127	82,352	500,479
“ 126 .....	117,627	26,141	143,768
“ 135 .....	3,118	7,797	10,915
“ 401 (M.-C.F.) .....	266,841	153,218	420,059
“ 402 .....	2,867	—	2,867

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>MIDDLESEX (Cont'd)</b>			
Sidewalks .....	739	—	739
Connecting Links:			
City of London .....	309,247	—	309,247
Town of Parkhill .....	—	974	974
Town of Strathroy .....	146,326	1,080	147,406
Village of Glencoe .....	173,788	49	173,837
Village of Lucan .....	—	595	595
Development Roads .....	3,269	—	3,269
Lands and Buildings .....	11,328	9,114	20,442
Weigh Scales .....	—	3,368	3,368
Miscellaneous Surveys .....	15	—	15
	<u>\$2,887,050</u>	<u>\$ 761,147</u>	<u>\$3,648,197</u>
<b>NORFOLK:</b>			
Highway 3 .....	\$ 27,627	\$ 116,547	\$ 144,174
" 6 .....	90,844	12,725	103,569
" 19 .....	436	6,885	7,321
" 24 .....	441,997	86,353	528,350
" 59 .....	8,632	61,628	70,260
Connecting Links:			
Town of Delhi .....	—	1,053	1,053
Town of Port Dover .....	501,125	508	501,633
Town of Simcoe .....	128,192	1,203	129,395
Development Roads .....	583,450	—	583,450
Lands and Buildings .....	7,100	860	7,960
	<u>\$1,789,403</u>	<u>\$ 287,762</u>	<u>\$2,077,165</u>
<b>NORTHUMBERLAND &amp; DURHAM:</b>			
Highway 2 .....	\$ 728,905	\$ 270,918	\$ 999,823
" 7 .....	23	5,802	5,825
" 7A .....	442,814	86,970	529,784
" 28 .....	187,095	103,788	290,883
" 30 .....	137,091	100,902	237,993
" 33 .....	35,024	21,674	56,698
" 35 .....	42,060	113,109	155,169
" 45 .....	112,047	86,451	198,498
" 106 .....	3,396	10,298	13,694
" 115 .....	38,622	246,841	285,463
" 401 (M.-C.F.) .....	145,360	898,546	1,043,906
" 407 .....	1,869	—	1,869
Sidewalks .....	225	—	225
Connecting Links:			
Town of Bowmanville .....	11,708	452	12,160
Town of Campbellford .....	—	581	581
Town of Cobourg .....	50,845	5,507	56,352
Town of Port Hope .....	14,413	5,414	19,827
Village of Brighton .....	54,068	1,466	55,534
Village of Colborne .....	100,338	555	100,893
Village of Hastings .....	—	736	736
Village of Newcastle .....	—	332	332
Development Roads .....	369,691	—	369,691
Lands and Buildings .....	1,997	4,140	6,137
Miscellaneous Surveys .....	53	—	53
	<u>\$2,477,644</u>	<u>\$1,964,482</u>	<u>\$4,442,126</u>

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>ONTARIO:</b>			
Highway 2 .....	\$1,661,726	\$ 90,218	\$1,751,944
" 7 .....	155,809	283,252	439,061
" 7A .....	360	34,339	34,699
" 12 .....	25,175	235,643	260,818
" 47 .....	80,243	105,274	185,517
" 48 .....	137,986	99,206	237,192
" 69 .....	481	79,165	79,646
" 401 (M.-C.F.) .....	364,024	287,704	651,728
" 407 .....	2,772	—	2,772
Sec. Hwy. 503 .....	94	3,620	3,714
Connecting Links:			
City of Oshawa .....	46,746	—	46,746
Town of Uxbridge .....	—	7,855	7,855
Town of Whitby .....	3,267	12,217	15,484
Village of Beaverton .....	98,365	3,859	102,224
Development Roads .....	672,612	—	672,612
Lands and Buildings .....	88,599	3,249	91,848
	<u>\$3,338,259</u>	<u>\$1,245,601</u>	<u>\$4,583,860</u>
<b>OXFORD:</b>			
Highway 2 .....	\$ 18,399	\$ 89,617	\$ 108,016
" 3 .....	11,930	9,911	21,841
" 7 .....	15,458	—	15,458
" 19 .....	28,219	79,188	107,407
" 53 .....	461	9,917	10,378
" 59 .....	107,769	103,397	211,166
" 97 .....	3,254	59,675	62,929
" 401 (M.-C.F.) .....	3,785	218,729	222,514
" 403 .....	4,040	—	4,040
Sidewalks .....	90	—	90
Connecting Links:			
City of Woodstock .....	143,222	—	143,222
Village of Norwich .....	—	1,724	1,724
Village of Tavistock .....	—	1,256	1,256
Development Roads .....	152,868	—	152,868
Lands and Buildings .....	53,849	1,911	55,760
Miscellaneous Surveys .....	20	—	20
	<u>\$ 543,364</u>	<u>\$ 575,325</u>	<u>\$1,118,689</u>
<b>PEEL:</b>			
Highway 2 .....	\$ 88,744	\$ 85,357	\$ 174,101
" 5 .....	131,203	99,033	230,236
" 7 .....	93,451	70,443	163,894
" 9 .....	12,984	51,444	64,428
" 10 .....	1,815,937	258,476	2,074,413
" 24 .....	14,241	24,210	38,451
" 27 .....	4,280	—	4,280
" 50 .....	81,499	85,126	166,625
" 122 .....	1,789,995	17,155	1,807,150
" 136 .....	13,240	30,723	43,963
" 401 (M.-C.F.) .....	199,020	173,743	372,763
" 403 .....	94,784	—	94,784
Queen Elizabeth Way .....	4,286,627	166,348	4,452,975
Other Program:			
Belfield Expressway .....	487,621	—	487,621
Sidewalks .....	45,566	—	45,566



COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
PEEL (Cont'd)			
Connecting Links:			
Town of Brampton .....	187,029	16,811	203,840
Town of Port Credit .....	155,933	9,130	165,063
Village of Bolton .....	—	5,404	5,404
Development Roads .....	105,994	—	105,994
Lands and Buildings .....	29,673	8,023	37,696
Miscellaneous Surveys .....	5,911	—	5,911
	<u>\$9,643,732</u>	<u>\$1,101,426</u>	<u>\$10,745,158</u>
PERTH:			
Highway 7 .....	\$1,146,641	\$ 128,343	\$1,274,984
" 8 .....	12,422	70,175	82,597
" 19 .....	20,611	70,139	90,750
" 23 .....	562,163	133,321	695,484
" 59 .....	105	10,428	10,533
" 83 .....	225	7,643	7,868
" 86 .....	8,447	45,909	54,356
Connecting Links:			
City of Stratford .....	170,047	306	170,353
Town of Listowel .....	973	5,005	5,978
Town of Mitchell .....	143	2,234	2,377
Town of St. Mary's .....	16,102	—	16,102
Village of Milverton .....	—	271	271
Lands and Buildings .....	2,979	12,706	15,685
	<u>\$1,940,858</u>	<u>\$ 486,480</u>	<u>\$2,427,338</u>
PETERBOROUGH:			
Highway 7 .....	\$1,081,564	\$ 160,458	\$1,242,022
" 28 .....	1,041,744	145,889	1,187,633
" 30 .....	108,770	8,842	117,612
" 36 .....	3,116	53,837	56,953
" 45 .....	76,756	14,351	91,107
" 115 .....	544	2,719	3,263
" 121 .....	1,614	3,480	5,094
Sec. Hwy. 503 .....	672	4,584	5,256
" " 504 .....	—	69,719	69,719
" " 507 .....	475,345	110,756	586,104
" " 620 .....	30,794	59,965	90,759
" " 620A .....	—	890	890
" " 649 .....	373	6,088	6,461
Connecting Links:			
City of Peterborough .....	326,753	—	326,753
Village of Lakefield .....	—	741	741
Village of Norwood .....	—	565	565
Development Roads .....	1,009,595	7,319	1,016,914
Lands and Buildings .....	2,234	1,522	3,756
	<u>\$4,159,874</u>	<u>\$ 651,728</u>	<u>\$4,811,602</u>
PRESCOTT AND RUSSELL:			
Highway 17 .....	\$ 154,912	\$ 265,514	\$ 420,426
" 34 .....	—	29,864	29,864
" 138 .....	930	—	930
" 417 .....	27,812	—	27,812

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
PRESCOTT & RUSSELL (Cont'd)			
Other Program:			
Perley Bridge (Hawkesbury) .....	4,484	4,511	8,995
Sidewalks .....	716	—	716
Connecting Links:			
Town of Hawkesbury .....	38,934	215	39,149
Town of Rockland .....	—	213	213
Town of Vankleek Hill .....	—	220	220
Development Roads .....	696,183	—	696,183
Lands and Buildings .....	8,410	2,027	10,437
Weigh Scales .....	—	3,049	3,049
	<u>\$ 932,381</u>	<u>\$ 305,613</u>	<u>\$1,237,994</u>
PRINCE EDWARD:			
Highway 14 .....	\$ 733	\$ 48,578	\$ 49,311
" 33 .....	36,291	100,436	136,727
" 49 .....	915,956	37,373	953,329
Connecting Links:			
Town of Picton .....	47,103	270	47,373
Village of Bloomfield .....	—	2,179	2,179
Village of Wellington .....	—	1,281	1,281
Development Roads .....	901,625	—	901,625
Ferries .....	459	117,879	118,338
Lands and Buildings .....	—	459	459
	<u>\$1,902,167</u>	<u>\$ 308,455</u>	<u>\$2,210,622</u>
RENFREW:			
Highway 17 .....	\$ 488,641	\$ 417,485	\$ 906,126
" 29 .....	—	2,354	2,354
" 41 .....	63,261	131,100	194,361
" 60 .....	281,507	125,641	407,148
" 62 .....	471,938	126,027	597,965
" 132 .....	808	43,505	44,313
Sec. Hwy. 500 .....	3,544	58,233	61,777
" " 508 .....	35,068	53,392	88,460
" " 511 .....	6,382	9,157	15,539
" " 512 .....	25,257	69,080	94,337
" " 513 .....	4,428	27,084	31,512
" " 515 .....	500,488	86,600	587,088
" " 517 .....	—	9,934	9,934
" " 635 .....	—	3,203	3,203
" " 653 .....	434,562	14,896	449,458
Sidewalks .....	772	—	772
Connecting Links:			
Town of Pembroke .....	34,873	22,496	57,369
Town of Renfrew .....	—	4,973	4,973
Village of Barry's Bay .....	—	1,127	1,127
Village of Eganville .....	—	745	745
Development Roads .....	1,442,053	—	1,442,053
Lands and Buildings .....	56,492	7,797	64,289
Weigh Scales .....	—	1,429	1,429
	<u>\$3,850,074</u>	<u>\$1,216,258</u>	<u>\$5,066,332</u>

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>SIMCOE:</b>			
Highway 9 .....	\$ 100,036	\$ 44,056	\$ 144,092
" 11 .....	70,113	385,348	455,461
" 12 .....	143,125	162,751	305,876
" 24 .....	7,687	45,123	52,810
" 26 .....	990,953	140,096	1,131,049
" 27 .....	629,750	241,084	870,834
" 69 .....	—	2,530	2,530
" 88 .....	105	21,519	21,624
" 89 .....	39,133	63,977	103,110
" 90 .....	4,445	49,927	54,372
" 91 .....	233,282	10,538	243,820
" 92 .....	452	29,004	29,456
" 93 .....	9,192	67,535	76,727
" 103 .....	6,578	21,490	28,068
" 400 .....	170,214	1,056,751	1,226,965
Sidewalks .....	Cr. 1,084	—	Cr. 1,084
Connecting Link:			
City of Barrie .....	141,944	23,858	165,802
Town of Alliston .....	15,207	3,655	18,862
Town of Bradford .....	—	8,282	8,282
Town of Collingwood .....	94,955	1,740	96,695
Town of Midland .....	77,987	2,509	80,496
Town of Orillia .....	29,270	10,306	39,576
Town of Penetanguishene .....	—	4,309	4,309
Town of Stayner .....	36,817	694	37,511
Village of Coldwater .....	—	1,790	1,790
Village of Cookstown .....	27,082	3,799	30,881
Village of Elmvale .....	—	2,860	2,860
Village of Port McNicoll .....	—	1,320	1,320
Village of Victoria Harbour .....	—	3,274	3,274
Village of Wasaga Beach .....	—	694	694
Development Roads .....	112,277	—	112,277
Lands and Buildings .....	66,341	4,420	70,761
Miscellaneous Surveys .....	515	—	515
	<u>\$3,006,376</u>	<u>\$2,415,239</u>	<u>\$5,421,615</u>
<b>STORMONT, DUNDAS AND GLENGARRY</b>			
Highway 2 .....	\$ 70,878	\$ 122,063	\$ 192,941
" 31 .....	305,392	80,939	386,331
" 34 .....	8,066	103,712	111,778
" 43 .....	157,246	139,792	297,038
" 138 .....	28,832	23,828	52,660
" 401 (M.-C.F.) .....	1,707,702	325,057	2,032,759
Sidewalks .....	2,130	—	2,130
Connecting Links:			
City of Cornwall .....	159,217	—	159,217
Town of Alexandria .....	—	19,409	19,409
Village of Chesterville .....	—	1,646	1,646
Village of Winchester .....	—	2,728	2,728
Development Roads .....	1,005,699	—	1,005,699
Lands and Buildings .....	101,149	5,178	106,327
Weigh Scales .....	2,374	2,276	4,650
Miscellaneous Surveys .....	10,786	—	10,786
	<u>\$3,559,471</u>	<u>\$ 826,628</u>	<u>\$4,386,099</u>

## COUNTY

## CONSTRUCTION

## MAINTENANCE

## TOTAL

## VICTORIA:

Highway 7 .....	\$ 157,612	\$ 143,118	\$ 300,730
" 35 .....	34,595	147,402	181,997
" 35A .....	1,722	5,024	6,746
" 36 .....	22,858	50,134	72,992
" 46 .....	228,565	111,748	340,313
" 48 .....	1,134	9,912	11,046
" 121 .....	26,236	68,164	94,400
Sec. Hwy. 503 .....	114,615	151,496	266,111
" " 505 .....	11,228	31,679	42,907
" " 649 .....	7,188	19,628	26,816
Connecting Links:			
Town of Lindsay .....	135,899	10,297	146,196
Village of Bobcaygeon .....	—	2,152	2,152
Village of Fenelon Falls .....	35,913	2,040	37,953
Village of Omemee .....	—	1,244	1,244
Village of Woodville .....	66,594	—	66,594
Development Roads .....	571,396	—	571,396
Lands and Buildings .....	129,539	1,335	130,874
	<u>\$1,545,094</u>	<u>\$ 755,373</u>	<u>\$2,300,467</u>

## WATERLOO:

Highway 7 .....	\$ 104,648	\$ 111,299	\$ 215,947
" 8 .....	7,291,693	41,758	7,333,451
" 24 .....	10,277	31,751	42,028
" 24A .....	57,634	10,758	68,392
" 85 .....	12,332	38,532	50,864
" 86 .....	125,964	45,949	171,913
" 97 .....	946	31,306	32,252
" 401 (M.-C.F.) .....	3,850	109,778	113,628
Sidewalks .....	1,340	—	1,340
Connecting Links			
City of Galt .....	228,814	3,429	232,243
City of Kitchener .....	—	1,625	1,625
City of Waterloo .....	—	45	45
Town of Elmira .....	702	1,205	1,907
Town of Hespeler .....	1,998	2,834	4,832
Town of New Hamburg .....	—	467	467
Town of Preston .....	127,705	12,731	140,436
Lands and Buildings .....	—	1,597	1,597
Miscellaneous Surveys .....	16,149	—	16,149
	<u>\$7,984,052</u>	<u>\$ 445,064</u>	<u>\$8,429,116</u>

## WELLAND:

Highway 3 .....	\$ 620,521	\$ 134,246	\$ 754,767
" 3A .....	1,790	46,259	48,049
" 3C .....	—	42,323	42,323
" 8 .....	23,376	15,316	38,692
" 20 .....	460,131	57,695	517,826
" 57 .....	143	19,465	19,608
" 58 .....	170,144	71,534	241,678
" 405 .....	257	7,539	7,796
" 406 .....	285,310	—	285,310
Queen Elizabeth Way .....	706,617	411,093	1,117,710
Other Programs:			
Main St. East Tunnel (Welland) .....	14,516	—	14,516
Thorold Tunnel .....	8,641,325	—	8,641,325
Rainbow Bridge Plaza .....	777,217	—	777,217



COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
<b>WELLAND (Cont'd)</b>			
Connecting Links:			
City of Niagara Falls .....	187,132	—	187,132
City of Port Colborne .....	44,737	—	44,737
Town of Fort Erie .....	30,412	1,710	32,122
Development Roads .....	434	—	434
Lands and Buildings .....	2,432	2,407	4,839
Miscellaneous Surveys .....	2,090	—	2,090
	<u>\$11,968,584</u>	<u>\$ 809,587</u>	<u>\$12,778,171</u>
<b>WELLINGTON:</b>			
Highway 6 .....	\$ 510,287	\$ 164,486	\$ 674,773
" 7 .....	16,574	42,590	59,164
" 9 .....	27,652	105,952	133,604
" 23 .....	160	7,299	7,459
" 24 .....	9,696	91,366	101,062
" 25 .....	36,807	24,882	61,689
" 86 .....	192,148	39,777	231,925
" 87 .....	856	23,015	23,871
" 89 .....	90,460	60,423	150,883
" 401 (M.-C.F.) .....	5,364	121,642	127,006
Connecting Links:			
City of Guelph .....	116,854	1,811	118,665
Town of Fergus .....	26,449	1,085	27,534
Town of Harriston .....	—	3,373	3,373
Town of Mount Forest .....	—	5,359	5,359
Town of Palmerston .....	—	314	314
Village of Arthur .....	—	463	463
Village of Clifford .....	—	724	724
Village of Erin .....	—	816	816
Development Roads .....	725,501	6,405	731,906
Lands and Buildings .....	22,528	2,239	24,767
	<u>\$1,781,336</u>	<u>\$ 704,021</u>	<u>\$2,485,357</u>
<b>WENTWORTH:</b>			
Highway 2 .....	\$ 643,287	\$ 67,809	\$ 711,096
" 5 .....	14,166	102,832	116,998
" 6 .....	415,655	105,086	520,741
" 8 .....	2,136,967	101,078	2,238,045
" 20 .....	697	53,918	54,615
" 52 .....	27,134	58,573	85,707
" 53 .....	5,549	40,636	46,185
" 56 .....	1,002	31,750	32,752
" 97 .....	2,155	36,666	38,821
" 99 .....	93,620	47,801	141,421
" 403 .....	4,176,733	48,104	4,224,837
Queen Elizabeth Way .....	2,179,711	115,381	2,295,092
Sidewalks .....	475	—	475
Connecting Links:			
Town of Dundas .....	105,602	4,372	109,974
Town of Stoney Creek .....	—	1,022	1,022
Lands and Buildings .....	77,784	3,245	81,029
Weigh Scales .....	523	—	523
Miscellaneous Surveys .....	3,254	—	3,254
	<u>\$9,884,314</u>	<u>\$ 818,273</u>	<u>\$10,702,587</u>

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
YORK:			
Highway 2 .....	\$ 51,775	\$ —	\$ 51,775
“ 2A.....	356	13,869	14,225
“ 5 .....	3,261	4,126	7,387
“ 7 .....	277,213	206,994	484,207
“ 9 .....	118,791	61,410	180,201
“ 11.....	432,981	223,786	656,767
“ 27 .....	4,619,171	268,134	4,887,305
“ 47 .....	40,302	15,910	56,212
“ 48 .....	421,163	234,160	655,323
“ 50 .....	50,872	19,521	70,393
“ 117.....	—	5,770	5,770
“ 400 .....	544,486	313,014	857,500
“ 401 (M.-C.F.) .....	19,289,334	1,019,739	20,309,073
“ 403 .....	9,925	—	9,925
“ 404 .....	21,797	—	21,797
“ 407.....	202,090	—	202,090
Queen Elizabeth Way .....	8,594,539	100,116	8,694,655
Other Programs:			
Belfield Expressway (Toronto) .....	1,503,974	—	1,503,974
International Airport Road (Toronto) ..	4,225	22,406	26,631
The Queensway (Toronto) .....	Cr. 5,250	—	Cr. 5,250
Yonge Street (Toronto) .....	16,575	—	16,575
Sidewalks .....	22,671	—	22,671
Connecting Links:			
Town of Aurora .....	11,233	3,774	15,007
Town of Richmond Hill .....	—	8,335	8,335
Village of Markham .....	—	12,758	12,758
Village of Stouffville .....	—	4,357	4,357
Lands and Buildings .....	67,363	91,382	158,745
Miscellaneous Surveys .....	4,575	—	4,575
	<u>\$36,303,422</u>	<u>\$2,629,561</u>	<u>\$38,932,983</u>

	DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
ALGOMA:				
Highway	17.....	\$2,967,761	\$ 957,658	\$3,925,419
"	101.....	442,787	100,818	543,605
"	108.....	492	91,097	91,589
"	129.....	274,219	267,061	541,280
Sec. Hwy.	538.....	69,756	8,213	77,969
"	546.....	41,118	111,232	152,350
"	547.....	1,867	6,657	8,524
"	548.....	112,785	92,269	205,054
"	550.....	35,234	23,677	58,911
"	552.....	50,834	35,971	86,805
"	552A.....	—	3,111	3,111
"	553.....	—	67,065	67,065
"	554.....	8,745	26,228	34,973
"	555.....	1,936	17,885	19,821
"	556.....	134,394	68,412	202,806
"	557.....	409	39,327	39,736
"	561.....	13,739	56,554	70,293
"	563.....	12,665	11,958	24,623
"	565.....	41	2,919	2,960
"	631.....	554,390	118,486	672,876
"	638.....	115,756	108,275	224,031
"	639.....	14,657	28,186	42,843
"	651.....	745,387	8,865	754,252
Sidewalks	.....	3,438	—	3,438
Access Roads:				
Panel Mine Road	.....	—	6,111	6,111
Denison Mine Road	.....	—	2,968	2,968
Stanrock Mine Road	.....	—	11,427	11,427
Milliken Mine Road	.....	—	3,129	3,129
Algom-Nordic Mine Road	.....	—	1,888	1,888
Old Garden River Road	.....	9,659	—	9,659
Connecting Links:				
Township of Michipicoten	.....	—	490	490
City of Sault Ste. Marie	.....	379,266	—	379,266
Town of Blind River	.....	—	1,330	1,330
Town of Thessalon	.....	Cr. 686	4,115	3,429
Unincorporated Township Roads:				
Statute Labour Board	.....	18,220	21,840	40,060
Local Road Board	.....	75,282	60,914	136,196
Special — Settlers	.....	2,163	524	2,687
Development Roads	.....	102,601	—	102,601
Ferries	.....	—	146,132	146,132
Lands and Buildings	.....	135,595	27,343	162,938
Miscellaneous Surveys	.....	4,418	—	4,418
		\$6,328,928	\$2,540,135	\$8,869,063

## COCHRANE:

Highway	11.....	\$ 292,890	\$ 840,166	\$1,133,056
"	67.....	937,373	47,042	984,415
"	101.....	343,145	267,905	611,050
"	144.....	9,212	1,616	10,828
Sec. Hwy.	572.....	1,398	27,720	29,118
"	574.....	38,075	88,379	126,454
"	575.....	—	3,142	3,142
"	576.....	732,260	26,129	758,389
"	577.....	96,973	53,579	150,552
"	578.....	48,999	18,313	67,312
"	579.....	18,558	86,431	104,989

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
COCHRANE (Cont'd)			
" " 581.....	349,133	7,645	356,778
" " 583.....	49,280	137,492	186,772
" " 610.....	57,039	40,107	97,146
" " 626.....	383	31,189	31,572
" " 629.....	49,061	22,462	71,523
" " 631.....	—	8,655	8,655
" " 636.....	2,802	9,582	12,384
" " 652.....	20,396	15,103	35,499
" " 655.....	6,405	27,988	34,393
Tertiary Road 807 .....	155	50,272	50,427
Sidewalks .....	863	—	863
Connecting Links:			
Township of Kendrey .....	3,264	520	3,784
Township of Tisdale .....	112,237	—	112,237
Town of Cochrane .....	—	5,773	5,773
Town of Hearst .....	—	4,254	4,254
Town of Iroquois Falls .....	—	1,888	1,888
Town of Kapuskasing .....	—	86	86
Town of Matheson .....	—	1,210	1,210
Town of Timmins .....	61,318	9,136	70,454
Unincorporated Township Roads:			
Statute Labour Board .....	34,406	54,871	89,277
Local Road Board .....	67,777	56,166	123,943
Special-Settlers .....	—	1,935	1,935
Special-Indian Reserves .....	—	713	713
Ferries .....	—	20,974	20,974
Lands and Buildings .....	150,524	26,456	176,980
Weigh Scales .....	921	—	921
Miscellaneous Surveys .....	2,973	—	2,973
	<u>\$3,487,820</u>	<u>\$1,994,899</u>	<u>\$5,482,719</u>
HALIBURTON:			
Highway 28.....	\$ 30,313	\$ 18,992	\$ 49,305
" 35.....	489,706	136,253	625,959
" 60.....	—	15,700	15,700
" 121.....	30,667	140,511	171,178
Sec. Hwy. 503.....	15,841	88,120	103,961
" " 507.....	102,564	12,549	115,113
" " 519.....	150,861	66,319	217,180
" " 530.....	134,590	28,584	163,174
" " 648.....	8,522	81,933	90,455
Sidewalks .....	968	—	968
Development Roads .....	74,947	—	74,947
Lands and Buildings .....	6,161	1,820	7,981
	<u>\$1,045,140</u>	<u>\$ 590,781</u>	<u>\$1,635,921</u>
KENORA:			
Highway 17.....	\$ 528,717	\$ 398,754	\$ 927,471
" 71.....	203,768	97,028	300,796
" 72.....	1,612,595	62,891	1,675,486
" 105.....	1,037,381	122,123	1,159,504
" 116.....	265,881	24,988	290,869
" 119.....	6,628	28,710	35,338
" 125.....	390,006	11,599	401,605
" 128 .....	16,124	43,343	59,467



DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>KENORA (Cont'd)</b>			
Sec. Hwy. 594.....	—	80,180	80,180
“ “ 596.....	134,723	60,419	195,142
“ “ 598.....	126	6,864	6,990
“ “ 599.....	30,196	144,545	174,741
“ “ 601.....	6,606	40,217	46,823
“ “ 603.....	—	12,630	12,630
“ “ 604.....	3,820	8,411	12,231
“ “ 605.....	395	14,564	14,959
“ “ 609.....	1,412	13,829	15,241
“ “ 618.....	261	11,594	11,855
“ “ 641.....	—	21,178	21,178
“ “ 642.....	6,978	18,967	25,945
“ “ 646.....	87	4,015	4,102
“ “ 647.....	416	11,976	12,392
“ “ 657.....	6,726	5,701	12,427
“ “ 659.....	1,415	23,046	24,461
Tertiary Road 804.....	—	32,752	32,752
“ “ 808.....	—	15,161	15,161
<b>Connecting Links:</b>			
Town of Dryden.....	—	2,112	2,112
Town of Keewatin.....	—	608	608
Town of Kenora.....	—	112,535	112,535
<b>Unincorporated Township Roads:</b>			
Statute Labour Board.....	2,737	48,284	51,021
Local Road Board.....	—	33,149	33,149
Special-Settlers.....	—	4,687	4,687
Special-Indian Reserves.....	—	2,936	2,936
Lands and Buildings.....	135,144	12,357	147,501
Weigh Scales.....	12,653	3,192	15,845
Miscellaneous Surveys.....	690	—	690
	<u>\$4,405,485</u>	<u>\$1,535,345</u>	<u>\$5,940,830</u>
<b>MANITOULIN:</b>			
Highway 68.....	\$ 281,255	\$ 254,330	\$ 535,585
Sec. Hwy. 540.....	112,241	223,579	335,820
“ “ 540A.....	—	6,523	6,523
“ “ 542.....	118,424	133,925	252,349
“ “ 542A.....	—	3,084	3,084
“ “ 551.....	28,263	41,165	69,428
“ “ 637.....	14,792	108,188	122,980
<b>Connecting Link:</b>			
Town of Little Current.....	—	697	697
<b>Unincorporated Township Roads:</b>			
Statute Labour Board.....	—	8,876	8,876
Local Road Board.....	1,185	11,250	12,435
Development Roads.....	—	119,374	119,374
Lands and Buildings.....	5,508	1,954	7,462
	<u>\$ 561,668</u>	<u>\$ 912,945</u>	<u>\$1,474,613</u>
<b>MUSKOKA:</b>			
Highway 11.....	\$1,286,300	\$ 201,944	\$1,488,244
“ 35.....	158,019	27,631	185,650
“ 60.....	3,458	37,256	40,714
“ 69.....	1,405,289	76,152	1,481,441
“ 103.....	4,530	75,296	79,826

	DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
MUSKOKA (Cont'd)				
"	118.....	1,178,621	106,468	1,285,089
"	400.....	165	—	165
Sec. Hwy.	501.....	40,423	38,547	78,970
"	514.....	76	35,502	35,578
"	516.....	103,209	68,227	171,436
"	525.....	—	2,931	2,931
"	527.....	187	32,262	32,449
"	532.....	203,966	64,838	268,804
"	592.....	—	590	590
"	612.....	—	9,639	9,639
"	632.....	144,405	25,856	170,261
"	660.....	16,408	49,867	66,275
Connecting Links:				
	Town of Bracebridge .....	—	1,633	1,633
	Town of Gravenhurst .....	9,471	4,045	13,516
	Town of Huntsville .....	Cr. 275	4,926	4,651
	Village of Port Carling .....	79,234	1,925	81,159
Unincorporated Township Roads:				
	Statute Labour Board .....	—	15,208	15,208
	Local Road Board .....	972	18,345	19,317
	Development Roads .....	49,986	—	49,986
	Lands and Buildings .....	101,096	20,719	121,815
		<u>\$4,785,540</u>	<u>\$ 919,807</u>	<u>\$5,705,347</u>
NIPISSING:				
Highway	11.....	\$ 54,178	\$ 668,010	\$ 722,188
"	17.....	897,267	255,616	1,152,883
"	60.....	368,148	173,017	541,165
"	63.....	1,932,666	107,131	2,039,797
"	64.....	113,361	167,414	280,775
"	94.....	38,770	16,946	55,716
"	123.....	595,988	13,476	609,464
"	127.....	37,804	38,353	76,157
Sec. Hwy.	514.....	—	2,664	2,664
"	523.....	4,518	33,838	38,356
"	528.....	—	4,481	4,481
"	531.....	62	6,214	6,276
"	533.....	13,928	86,509	100,437
"	539.....	12,925	61,044	73,969
"	539A.....	—	2,666	2,666
"	630.....	89,436	46,703	136,139
"	656.....	736	3,841	4,577
Tertiary Road	805.....	9,356	12,025	21,381
Connecting Links:				
	Township of Ferris West .....	74,780	6,811	81,591
	City of North Bay .....	134,514	—	134,514
	Town of Sturgeon Falls .....	—	2,694	2,694
Unincorporated Township Roads:				
	Statute Labour Board .....	8,399	14,812	23,211
	Local Road Board .....	91,153	65,147	156,300
	Special-Settlers .....	—	5,928	5,928
	Development Roads .....	581,148	—	581,148
	Lands and Buildings .....	154,448	49,672	204,120
	Miscellaneous Surveys .....	16	—	16
		<u>\$5,213,601</u>	<u>\$1,845,012</u>	<u>\$7,058,613</u>

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>PARRY SOUND:</b>			
Highway 11.....	\$ 54,397	\$ 211,150	\$ 265,547
“ 69.....	30,478	242,608	273,086
“ 124.....	540,777	159,731	700,508
Sec. Hwy. 510.....	—	3,402	3,402
“ “ 518.....	97,376	189,872	287,248
“ “ 520.....	24,805	77,262	102,067
“ “ 522.....	85,990	113,404	199,394
“ “ 524.....	174	11,384	11,558
“ “ 526.....	656	10,155	10,811
“ “ 529.....	—	47,852	47,852
“ “ 529A.....	814	9,851	10,665
“ “ 532.....	10,722	26,110	36,832
“ “ 534.....	115,166	81,588	196,754
“ “ 559.....	1,052	31,814	32,866
“ “ 592.....	1,323	48,200	49,523
“ “ 612.....	—	8,469	8,469
“ “ 632.....	9,806	18,252	28,058
“ “ 644.....	—	1,898	1,898
“ “ 645.....	—	10,796	10,796
“ “ 654.....	64,480	45,276	109,756
<b>Connecting Links:</b>			
Town of Parry Sound.....	—	4,053	4,053
Village of Rosseau.....	—	351	351
<b>Unincorporated Township Roads:</b>			
Statute Labour Board.....	28,806	91,521	120,327
Local Road Board.....	38,649	53,472	92,121
Special-Settlers.....	—	475	475
Special-Indian Reserves.....	—	27,655	27,655
Development Roads.....	231,358	2,249	233,607
Lands and Buildings.....	15,336	4,187	19,523
Miscellaneous Surveys.....	511	—	511
	<u>\$1,352,676</u>	<u>\$1,533,037</u>	<u>\$2,885,713</u>

**RAINY RIVER:**

Highway 11.....	\$1,103,367	\$ 244,922	\$1,348,289
“ 71.....	894,707	49,742	944,449
Sec. Hwy. 600.....	2,456	111,154	113,610
“ “ 602.....	73,861	39,139	113,000
“ “ 611.....	21,723	21,552	43,275
“ “ 613.....	46,813	55,450	102,263
“ “ 615.....	12,519	28,084	40,603
“ “ 617.....	18,596	43,780	62,376
“ “ 619.....	35,230	38,194	73,424
“ “ 621.....	1,827	95,494	97,321
“ “ 622.....	20,303	11,682	31,985
“ “ 623.....	—	5,461	5,461
“ “ 633.....	—	8,631	8,631
<b>Access Road:</b>			
Raleigh Lake Road.....	1,028	—	1,028
<b>Connecting Links:</b>			
Town of Fort Frances.....	32,368	10,073	42,441
Town of Rainy River.....	—	84	84
<b>Unincorporated Township Roads:</b>			
Statute Labour Board.....	1,664	19,024	20,688
Local Road Board.....	1,072	3,246	4,318

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
RAINY RIVER (Cont'd)			
Special-Settlers .....	1,161	504	1,665
Special-Indian Reserves .....	—	3,610	3,610
Development Roads .....	54,020	—	54,020
Lands and Buildings .....	77,886	337	78,223
Weigh Scales .....	—	1,449	1,449
	<u>\$2,400,601</u>	<u>\$ 791,612</u>	<u>\$3,192,213</u>
SUDBURY:			
Highway 17 .....	\$ 726,048	\$ 329,637	\$1,055,685
" 64 .....	8,636	68,207	76,843
" 68 .....	42,046	72,000	114,046
" 69 .....	1,258,602	208,789	1,467,391
" 101 .....	1,033,537	267,946	1,301,483
" 129 .....	549,095	94,910	644,005
" 144 .....	4,567,293	156,353	4,723,646
Sec. Hwy. 528 .....	190	29,329	29,519
" " 528A .....	—	7,863	7,863
" " 535 .....	597,828	75,451	673,279
" " 536 .....	—	10,179	10,179
" " 537 .....	58,363	47,972	106,335
" " 539 .....	415,578	11,814	427,392
" " 541 .....	29,602	63,549	93,151
" " 541A .....	—	4,352	4,352
" " 543 .....	177,568	12,885	190,453
" " 544 .....	310	6,063	6,373
" " 545 .....	1,124	40,073	41,197
" " 549 .....	73,807	49,930	123,737
" " 553 .....	2,134	14,853	16,987
" " 560 .....	1,859	166,112	167,971
" " 560A .....	—	17,842	17,842
" " 606 .....	—	1,694	1,694
" " 607 .....	68,103	28,971	97,074
" " 607A .....	—	3,113	3,113
" " 616 .....	5	3,231	3,236
" " 634 .....	725,509	22,332	747,841
" " 637 .....	16	86,373	86,389
" " 658 .....	24,634	34,228	58,862
Tertiary Road 805 .....	1,026	7,281	8,307
" " 806 .....	—	6,045	6,045
Sidewalks .....	793	—	793
Connecting Links:			
City of Sudbury .....	462,313	—	462,313
Town of Capreol .....	—	2,748	2,748
Town of Espanola .....	—	1,846	1,846
Unincorporated Township Roads:			
Statute Labour Board .....	35,442	42,763	78,205
Local Road Board .....	127,006	98,852	225,858
Special-Settlers .....	264	9,014	9,278
Special-Indian Reserves .....	—	1,972	1,972
Development Roads .....	279,094	—	279,094
Lands and Buildings .....	307,418	38,198	345,616
Miscellaneous Surveys .....	885	—	885
	<u>\$11,576,128</u>	<u>\$2,144,770</u>	<u>\$13,720,898</u>



	DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
<b>THUNDER BAY:</b>				
Highway	11.....	\$5,580,030	\$ 771,627	\$6,351,657
"	11A.....	713,395	46,463	759,858
"	17.....	871,353	538,924	1,410,277
"	61.....	62,281	55,574	117,855
"	130.....	80,837	46,660	127,497
Sec. Hwy.	580.....	13	8,685	8,698
"	582.....	21	9,389	9,410
"	584.....	17,978	77,502	95,480
"	584A.....	—	3,820	3,820
"	585.....	23	41,160	41,183
"	586.....	2,968	4,143	7,111
"	587.....	40,134	36,885	77,019
"	588.....	104,855	107,331	212,186
"	589.....	16,812	29,963	46,775
"	590.....	20,156	69,420	89,576
"	591.....	—	7,492	7,492
"	593.....	12	42,915	42,927
"	595.....	23,065	29,728	52,793
"	597.....	5,495	16,098	21,593
"	599.....	603	97,800	98,403
"	608.....	21,098	30,537	51,635
"	614.....	1,301,147	97,751	1,398,898
"	625.....	24,406	79,637	104,043
"	627.....	7	13,233	13,240
"	628.....	39,731	7,869	47,600
"	643.....	59	12,498	12,557
Tertiary Road	800.....	40,196	31,225	71,421
"	801.....	3,518	10,215	13,733
"	802.....	8,457	13,136	21,593
<b>Industrial Road:</b>				
	Caramat to Manitouwadge .....	—	41,833	41,833
<b>Connecting Links:</b>				
	City of Fort William .....	288,492	15,432	303,924
	City of Port Arthur .....	19,609	—	19,609
	Town of Geraldton .....	—	6,579	6,579
<b>Unincorporated Township Roads:</b>				
	Statute Labour Board .....	Cr. 211	20,700	20,489
	Local Road Board .....	108,907	180,838	289,745
	Special—Settlers .....	—	28	28
	Special—Indian Reserves .....	—	35	35
Development Roads .....		10,596	—	10,596
Lands and Buildings .....		184,758	8,759	193,517
Weigh Scales .....		55,204	1,717	56,921
Miscellaneous Surveys .....		Cr. 1,009	—	Cr. 1,009
		<u>\$9,644,996</u>	<u>\$2,613,601</u>	<u>\$12,258,597</u>
<b>TIMISKAMING:</b>				
Highway	11.....	\$ 439,143	\$ 287,281	\$ 726,424
"	65.....	85,873	196,793	282,666
"	66.....	142,862	159,447	302,309
"	101.....	17,453	34,422	51,875
"	112.....	7,607	27,400	35,007
"	144.....	275,809	18,884	294,693
Sec. Hwy.	558.....	2,759	36,214	38,973
"	560.....	137,489	202,244	339,733
"	562.....	—	27,461	27,461
"	564.....	14,632	17,337	31,969

DISTRICT		CONSTRUCTION	MAINTENANCE	TOTAL
TIMISKAMING (Cont'd)				
" "	566.....	—	26,669	26,669
" "	567.....	1,808	59,548	61,356
" "	568.....	—	5,226	5,226
" "	569.....	35,715	43,251	78,966
" "	570.....	—	3,739	3,739
" "	571.....	—	9,588	9,588
" "	573.....	1,041	26,723	27,764
" "	624.....	148,833	50,521	199,354
" "	640.....	—	4,931	4,931
" "	650.....	1,684	9,751	11,435
Connecting Links:				
	Township of Teck .....	—	9,360	9,360
	Town of Cobalt .....	56,035	3,427	59,462
	Town of Haileybury .....	819	4,356	5,175
	Town of New Liskeard .....	41,313	10,289	51,602
Unincorporated Township Roads:				
	Statute Labour Board .....	16,681	42,949	59,630
	Local Road Board .....	3,379	24,258	27,637
	Special-Settlers .....	186	8,434	8,620
	Special-Indian Reserves .....	—	5,554	5,554
	Development Roads .....	11,271	—	11,271
	Lands and Buildings .....	65,708	20,934	86,642
	Weigh Scales .....	28,686	—	28,686
	Miscellaneous Surveys .....	77	—	77
		<u>\$1,536,863</u>	<u>\$1,376,991</u>	<u>\$2,913,854</u>
County and District Totals .....		\$209,758,362	\$49,581,678	\$259,340,040
Sundry unallocated, District Office				
	Administration, Engineering, Building, Inventory charges, etc. ....	3,840,421	10,583,272	14,423,693
Total Expenditure .....		<u>\$213,598,783</u>	<u>\$60,164,950</u>	<u>\$273,763,733</u>

## APPENDIX No. 2

**Development Road Expenditure in Municipalities by County and Territorial Districts**  
**(Authorized by Part XI of The Highway Improvement Act)**

**April 1, 1967 to March 31, 1968**

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>BRANT</b>					
647	Cockshutt Road .....	5.6	County	\$ 7,500	
853	County Road No. 13 (Part) .....	2.8	County	237,387	
888	Blossom Avenue (Extension) ....	4.0	County	25,432	
929	County Roads No. 50 and 51 ....	1.7	County	2,529	
937	County Road No. 8 (Part) .....	1.8	County	12,580	
938	County Road No. 36 .....	0.7	County	80,283	
939	County Roads No. 3, 4, and 16 ..	2.4	County	12,861	
				<hr/>	\$ 378,572
<b>BRUCE</b>					
758	County Road No. 3 (Part) .....	12.5	County	\$ 6,037	
A 799	Ashfield-Huron Townline .....	0.7	Ashfield and Huron	87,590	
819	County Road No. 13A (Part) ..	1.0	County	199,844	
887	Purple Valley Road .....	3.0	Albemarle	7,387	
				<hr/>	\$ 300,858
<b>CARLETON</b>					
754	Dwyer Hill Road .....	10.4	Goulbourn	\$ 96,157	
822	Road from County Rd. 26 to Marlborough-Goulbourn Boundary .....	4.5	Marlborough	103,006	
823	Con. X/XI Road .....	5.8	Huntley	221,108	
953	Road Bet. Con. 11 and 111 .....	4.2	Fitzroy	4,732	
				<hr/>	\$ 425,003
<b>DUFFERIN</b>					
609	Hornings Mills-Terra Nova (Part) .....	7.1	Mulmur	\$ 2,007	
777	County Road No. 10 (Part) ....	6.9	County	10,227	
841	County Road No. 18 (Part) .....	12.2	County	15,037	
				<hr/>	\$ 27,271
<b>ELGIN</b>					
840	County Road No. 52 (Part) .....	12.0	County	\$891,457	
930	County Road No. 45 (Part) .....	12.3	County	2,361	
931	County Road No. 20 (Part) .....	5.8	County	5,926	
972	County Roads No. 47 and 48 (Part) and 49 .....	8.9	County	4,825	
				<hr/>	\$ 904,569

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
FRONTENAC					
771	Kennebec Twp. Road (Part) ....	2.7	Kennebec	\$ 11,864	
774	County Road No. 9 (Part) .....	6.8	County	Cr. 1,066	
806	Rd. from Hwy. 7 to Olden- Hinchinbrooke Boundary .....	7.7	Olden	522,711	
826	County Road No. 12 (Part) .....	6.5	County	338,355	
861	County Road No. 3 (Part) .....	7.9	County	668,839	
862	County Road No. 10 (Part) .....	5.2	County	342,813	
863	County Road No. 11A (Part) ..	2.6	County	4,559	
905	Plevna-Ompah Road (Part) .....	6.7	Clarendon and Miller Palmerston and N.	17,158	
906	Snow Road .....	15.0	and S. Canonto	15,241	
957	County Road No. 10 (Part) ....	3.5	County	5,693	
973	Clarendon Road .....	11.2	Clarendon and Miller	140	
					\$ 1,926,307
GREY					
715	Road to Ontario Hospital .....	2.0	Sydenham	\$ 1,546	
783	County Road No. 13 .....	25.0	County	713,888	
886	County Road No. 10 (Part) ....	17.5	County	558,540	
					\$ 1,273,974
HALDIMAND					
934	Sandusk Sideroad (Part) .....	8.9	Walpole	\$ 24,330	
					\$ 24,330
HASTINGS					
711	County Road No. 4 .....	4.5	County	\$ 8,700	
801	Weslemkoon Road .....	11.0	Tudor and Cashel	342,662	
802	Rd. from County Road 12 to Hwy. 62 .....	2.4	Madoc	177,949	
804	Road in Lots 23 and 24 Con. X	0.9	Wollaston	1,576	
805	Road along C.N.R. Right-of- Way (Baptiste Sta.) .....	3.1	Herschel	284,811	
824	County Road No. 12 (Part) .....	7.2	County	498,003	
854	County Road No. 5 (Part) .....	4.9	County	11,983	
855	County Road No. 9 (Part) .....	5.6	County	5,994	
856	County Road No. 3 .....	7.8	County	239,482	
882	Madawaska Road (Part) .....	4.8	Bangor, Wicklow and McClure	31,242	
883	Road bet. Con. VII/VIII .....	4.0	Tyendingaga	45,739	
914	County Roads No. 7A and 13 (Part) .....	2.0	County	5,963	
970	Wollaston Lake Townline .....	6.0	Wollaston	155	
978	Fort Stewart Road-McNeaul Hill .....	1.4	Carlow	1,641	
979	Musclow Road (Part) .....	5.4	Monteagle	722	
					\$ 1,656,622
HURON					
759	County Road No. 4 (Part) .....	10.1	County	\$ 31,641	
A 799	Ashfield-Huron Townline .....	0.6	Ashfield and Huron	87,591	
898	County Road No. 12 (Part) .....	1.3	County	1,651	
899	County Road No. 3 (Part) .....	4.2	County	14,460	
904	County Road No. 8 (Part) .....	6.5	County	17,577	
					\$ 152,920



ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>KENT</b>					
756	Kent County Road No. 11 (Part) .....	4.4	County	\$ 340	\$ 340
<b>LAMBTON</b>					
B 724	County Roads No. 12 and 6A ..	3.5	County	\$ 594	
733	Tri County Bridge to Hwy. 21 ..	2.7	Bosanquet	73,931	
837	County Road No. 5 (Part) .....	8.1	County	232,299	
858	County Road No. 2 (Part) .....	4.4	County	15,065	
954	County Road No. 4 (Part) .....	3.8	County	7,306	
955	County Road No. 1 (Part) .....	3.8	County	9,797	
					\$ 338,992
<b>LANARK</b>					
613	Fallbrooke Westerly .....	8.0	Bathurst	\$ 12,956	
654	Second Line Road .....	6.6	South Sherbrooke	5,807	
779	Black Creek Road .....	6.4	Lavant	225,954	
820	County Road No. 20 (Part) ....	4.3	County	101,761	
821	County Road No. 20 (Part) ....	2.0	County	972	
844	County Road No. 1A (Part) ....	6.4	County	647,532	
845	County Road No. 5A (Part) ....	3.8	County	256,056	
846	County Road No. 3C (Part) ....	6.4	County	10,595	
			Dalhousie and North		
880	Joe Lake Road .....	0.6	Sherbrooke	13,954	
932	County Road No. 6B .....	12.1	County	14,027	
933	County Road No. 3A .....	9.2	County	25,616	
					\$ 1,315,230
<b>LEEDS AND GRENVILLE</b>					
285R	Escott-Rockport Road .....	5.7	Escott Front	\$ 1,794	
572	Warburton-Long Point Road ....	6.0	County	19,106	
642	County Rd. No. 16 (Part) Merrickville to Jasper .....	8.5	County	1,116	
792	County Rd. No. 5A .....	2.1	County	326	
859	County Rd. No. 3 (Part) .....	3.3	County	412,096	
860	County Rd. No. 22 (Part) .....	5.3	County	320,802	
884	Kyes Road .....	3.0	Leeds and Lansdowne (Front)	75,000	
915	County Rd. No. 21 (Part) .....	3.2	County	2,692	
916	County Rd. No. 13 .....	7.9	County	23,566	
940	Athens-Addison Road (Part) ....	2.1	Rear of Yonge and Escott	9,200	
941	Athens-Addison Road (Part) ....	0.9	Elizabethtown	4,453	
971	County Road No. 5 (Part) .....	7.8	County	11,177	
					\$ 881,328
<b>LENNOX AND ADDINGTON</b>					
626	Tamsworth Easterly .....	4.0	Sheffield	\$ 149,041	
732	County Rd. No. 4 (Part) .....	10.8	County	27,092	
761	Dorland-Sir John A. Macdonald Monument .....	3.8	Adolphustown	8,764	
868	County Rd. No. 9 (Part) .....	4.8	County	9,215	
900	County Rd. No. 3 .....	1.7	County	7,579	
902	Vennachar Road .....	2.7	Denbigh, Abinger and Ashby	15,023	
907	County Road No. 14 (Part) ....	4.4	County	4,451	
908	County Road No. 8 (Part) .....	3.0	County	8,596	
					\$ 229,761

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>LINCOLN</b>					
c 683	Lincoln/Welland .....	7.2	County	\$ 434	
787	South Chippawa Road .....	7.2	Caistor	268,760	
				<hr/>	\$ 269,194
<b>MIDDLESEX</b>					
B 724	County Roads No. 12 and 6A ....	3.5	County	\$ 3,269	
				<hr/>	\$ 3,269
<b>NORFOLK</b>					
684	County Road No. 9 .....	8.4	County	\$237,918	
847	County Road No. 20 (Part) .....	3.3	County	274,642	
895	County Road No. 30 (Part) .....	4.6	County	219	
958	County Road No. 29 (Part) .....	2.5	County	70,671	
				<hr/>	\$ 583,450
<b>NORTHUMBERLAND AND DURHAM</b>					
704	Roseneath Easterly .....	2.9	Alnwick	\$ 22,347	
706	Base Line Road .....	4.8	Darlington	3,907	
725	Lots 6/7 Con. B, A, and I .....	3.0	Murray	76,142	
800	County Road No. 38 (Part) ....	0.4	County	43,251	
818	County Road No. 70 (Part) ....	1.7	County	172,222	
919	Proposed County Road .....	2.9	County	9,280	
920	County Road No. 18 (Part) ....	4.0	County	18,145	
944	Proposed Extension County Rd. No. 9 .....	3.0	County	7,559	
945	Proposed County Road .....	3.0	County	5,423	
946	Proposed County Road .....	4.2	County	9,013	
947	Colborne-Lake Port Road .....	2.7	County	2,402	
				<hr/>	\$ 369,691
<b>ONTARIO</b>					
769	County Road No. 21 (Part) ....	5.3	County	\$ 26,563	
848	County Road No. 12 (Part) ....	4.3	County	20,645	
849	County Road No. 1A (Part) ....	2.1	County	266,569	
850	County Road No. 11A (Part) ..	2.8	County	349,903	
959	County Road No. 4 (Part) .....	7.5	County	6,064	
960	Proposed Ontario Road .....	13.4	County	2,868	
				<hr/>	\$ 672,612
<b>OXFORD</b>					
793	Lass Bridge .....	—	Blenheim	\$128,040	
794	Wolverton Bridge .....	—	Blenheim	24,828	
				<hr/>	\$ 152,868
<b>PEEL</b>					
744	Twentieth Side Road .....	4.7	Albion	\$105,994	
				<hr/>	\$ 105,994

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
<b>PETERBOROUGH</b>					
587R	Havelock-Lasswade (Part) .....	17.7	Belmont and Mathuen	\$397,670	
659	Ninth Line Road .....	12.0	Dummer	144,221	
832	County Road No. 2 (Part) .....	4.7	County	34,959	
833	County Road No. 6 (Part) .....	5.1	County	62,291	
838	County Road No. 4 (Part) .....	9.4	County	370,454	
952	County Roads No. 11 and 12 ..	—	County	7,319	
				<hr/>	\$ 1,016,914
<b>PRESCOTT AND RUSSELL</b>					
773	County Road No. 2 (Part) .....	15.6	County	\$ 13,485	
789	County Road No. 18 (Part) .....	6.3	County	109,848	
864	County Road No. 9 (Part) .....	7.9	County	281,271	
865	County Road No. 15 (Part) .....	8.3	County	232,119	
956	County Road No. 1 (Part) .....	8.3	County	33,000	
969	County Road No. 3 (Part) .....	6.3	County	26,460	
				<hr/>	\$ 696,183
<b>PRINCE EDWARD</b>					
817	County Roads No. 7 and 8 (Part) .....	8.3	County	\$424,209	
866	County Road No. 12 (Part) .....	2.9	County	189,670	
867	County Road No. 13 (Part) .....	3.9	County	260,197	
942	County Roads 10 and 18 (Part) ..	5.5	County	19,158	
943	County Road No. 5 (Part) .....	4.4	County	8,391	
				<hr/>	\$ 901,625
<b>RENFREW</b>					
117R	Combermere-Rockingham .....	6.7	Radcliffe	\$ 13,192	
541	Admaston-Bagot Townline Road ..	10.4	Admaston, Bagot and Blythfield	123,270	
592	Hwy. 62 to Locksley .....	5.7	Alice and Fraser	1,239	
676	River Road .....	13.8	County	3,173	
738	Hardwood Lake-Palmer Rapids ..	7.0	Raglan	231,302	
747	Alice-Petawawa Townline .....	5.0	Alice, Fraser and Petawawa	12,561	
795	Barry's Bay Road .....	9.1	Sherwood, Jones and Burns	234,438	
796	Opeongo Road .....	10.2	Sebastopol	316,109	
797	Opeongo Road (Part) .....	6.6	Brudenell and Lyndoch	219,726	
798	Ruby Road .....	7.9	South Algona	217,620	
869	Madawaska River Bridge .....	—	Griffith, Matawachan	31,230	
872	Deux Rivieres Bridge .....	—	Head, Clara and Maria	30,570	
897	Opeongo Road .....	6.0	Gratton	7,576	
980	Ruby Road (Part) .....	2.0	Hagarty and Richards	47	
				<hr/>	\$ 1,442,053
<b>SIMCOE</b>					
760	Tenth Side Road .....	7.7	Tecumseth	\$112,277	
				<hr/>	\$ 112,277

ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	TOTAL BY COUNTY & TERRITORIAL DISTRICT
STORMONT, DUNDAS AND GLENGARRY				
719	Rd. Bet. Lots 12/13, Con. II-VIII .....	6.8	Mountain	\$ 1,679
788	County Road No. 24 (Part) .....	9.4	County	477,202
839	County Road 12 (Part) .....	6.3	County	464,906
921	County Road No. 15 (Part) .....	9.0	County	11,115
922	County Road No. 23 (Part) ...	4.9	County	9,873
923	County Road No. 12 (Part) ...	8.4	County	10,113
924	County Road No. 1 (Part) ...	6.9	County	8,872
982	Road between Con. V/VI .....	3.2	Kenyon	14,114
983	Post Road (Part) .....	0.8	Cornwall	7,825
				<hr/> \$ 1,005,699
VICTORIA				
718	County Road No. 8 .....	9.5	County	\$106,028
775	County Road No. 28 (Part) ....	5.6	County	1,813
842	County Road No. 5 (Part) .....	6.3	County	49,450
843	County Road No. 4 (Part) .....	5.5	County	382,166
851	County Road No. 8 .....	14.6	County	25,387
852	Road Westerly from Hwy. 121 ...	2.3	Somerville	6,552
				<hr/> \$ 571,396
WELLAND				
c 683	Lincoln/Welland .....	7.2	County	\$ 434
				<hr/> \$ 434
WELLINGTON				
825	County Road No. 58 (Part) ....	10.5	County	\$430,527
834	County Road No. 18 (Part) .....	6.4	County	16,366
835	County Road No. 26 (Part) .....	9.3	County	278,608
927	Fall Street-Rockwood Road ....	0.1	Eramosa	6,405
				<hr/> \$ 731,906
ALGOMA				
808	Road Bet. X/XI Southerly .....	1.5	Jocelyn	\$ 38,453
815	Little Rapids Bridge .....	0.1	Thessalon	64,148
				<hr/> \$ 102,601
HALIBURTON				
912	Carnarvon-Vankoughnet .....	20.5	County	\$ 65,857
975	Proposed Kawagama Lake Road .....	5.0	Sherborne, McClintock and Livingstone	9,090
				<hr/> \$ 74,947
MANITOULIN				
948	Bidwell Road (Part) .....	12.1	Assiginack	\$ 69,149
949	Bidwell Road (Part) .....	8.0	Howland	50,225
				<hr/> \$ 119,374
MUSKOKA				
667	S/Hwy. 527 to Stephenson Bdry. ....	3.7	Brunel	\$ 37,211
962	West Road (Part) John and Elm Sts. ....	0.4	Huntsville, Town	1,684
963	Brunel Road (Part) .....	2.0	Port Sydney, Village	7,883
964	Housey's Rapids-Barkway Road ....	4.4	Ryde	3,208
				<hr/> \$ 49,986



ROAD NUMBER	DESCRIPTION OR LOCATION	LENGTH (MILES)	JURISDICTION (TOWNSHIP UNLESS OTHERWISE INDICATED)	EXPENDITURE	TOTAL BY COUNTY & TERRITORIAL DISTRICT
NIPISSING					
656	Caderette Corners-Hwy. No. 64	4.2	Caldwell	\$134,945	
737	Con. XII-XIII Road .....	1.2	Chisholm	12,049	
743	Trout Lake Road .....	4.5	East Ferris	178,643	
782	Powassan-Rutherglen Rd. (Part) .....	3.8	Bonfield	250,168	
873	Rd. bet. Lots 1 and 2 Southerly from Hwy. 17 .....	2.3	Springer	5,343	
				<hr/>	\$ 581,148
PARRY SOUND					
34R	Dillon Cove Road .....	10.0	Carling	\$ 11,756	
136R	South Himsworth Twp. Road ....	3.7	South Himsworth	80	
614R	Humphrey Boundary Northerly	2.0	Christie	15,939	
680	Killbear Park Road .....	5.6	Carling	2,169	
790	Con. X/XI (Part) .....	0.7	Joly	38,585	
814	Road bet. Con. VIII/IX opposite Lots 12, 13, and 14	2.3	Ryerson	2,091	
829	Great North Road .....	1.2	Parry Sound, Town	154,633	
965	Whitstone Lake Road (Part) ..	1.0	Hagerman	821	
974	Cardwell Road (Part) .....	0.5	Rosseau, Village	418	
976	McKellar Centre Road (Part) ..	2.8	Monteagle	7,115	
				<hr/>	\$ 233,607
RAINY RIVER					
874	Township Road .....	7.1	Worthington	\$ 54,020	
				<hr/>	\$ 54,020
SUDBURY					
830	Whitson Creek Bridge .....	0.1	Chelmsford, Town	\$206,314	
913	Garson-Coniston Road .....	5.1	Neelon and Garson	33,334	
951	Lee Valley Road (Part) .....	8.0	Hallam	39,446	
				<hr/>	\$ 279,094
THUNDER BAY					
807	Side Road 2/3 .....	3.2	Conmee	\$ 10,596	
				<hr/>	\$ 10,596
TIMISKAMING					
809	Blanche River Bridge .....	0.1	Evanturel	\$ 5,555	
831	Little Otter Creek Bridge .....	0.1	Hilliard	2,949	
926	Bear Creek Bridge .....	—	Dymond and Harley	2,767	
				<hr/>	\$ 11,271
TOTALS .....		<hr/>	1,131.0		
				<hr/>	\$19,988,286

Development roads split into two counties:  
A Huron and Bruce  
B Middlesex and Lambton  
C Lincoln and Welland

## APPENDIX No. 3

## Unincorporated Townships Statue Labour Board Road Expenditure

## by Territorial Districts

## (Part XII, The Highway Improvement Act)

## For Year Ending March 31, 1968

LOCATION AND NAME	STATUTE LABOUR BOARD EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>ALGOMA</b>				
Aweres No. 1 .....	\$ 227	\$ 1,389	\$ —	\$ 1,616
Aweres No. 2 .....	1,594	2,751	—	4,345
Dennis .....	989	1,104	—	2,093
Deroche .....	623	1,790	—	2,413
Fenwick and Kars .....	2,352	4,904	1,484	8,740
Havilland .....	2,341	1,707	5,309	9,357
Ranger Lake Road .....	714	2,492	11,427	14,633
Shedden .....	2,518	2,518	—	5,036
Shields and Gaudette .....	173	2,327	—	2,500
Striker and Cobden .....	36	334	—	370
Tilley .....	560	524	—	1,084
	<u>\$ 12,127</u>	<u>\$ 21,840</u>	<u>\$ 18,220</u>	<u>\$ 52,187</u>
<b>COCHRANE</b>				
Brower West .....	\$ 936	\$ 1,970	\$ —	\$ 2,906
Calder .....	420	1,848	6,635	8,903
Casgrain .....	1,695	4,656	—	6,351
Devitt .....	1,364	1,166	12,041	14,571
Eilber and Devitt .....	4,390	4,948	—	9,338
Evelyn .....	2,230	1,349	—	3,579
Fox, Brower and Pyne .....	1,723	1,945	—	3,668
German and Matheson .....	1,612	2,361	—	3,973
Hanlan and Way .....	3,301	4,915	—	8,216
Kendall No. 1 .....	2,889	2,854	6,217	11,960
Kendall No. 2 .....	2,066	3,770	5,067	10,903
Kendall and Devitt .....	—	—	318	318
Kennedy .....	920	1,525	671	3,116
Lamarche .....	1,505	5,781	2,634	9,920
Leclair Avenue .....	880	747	—	1,627
Lowther and Way .....	3,647	5,113	—	8,760
Newmarket .....	985	1,906	723	3,614
Nordica, McEvay, McCann ....	1,238	1,232	—	2,470
Ogden .....	866	639	—	1,505
Shaw .....	578	525	—	1,103
Way Centre .....	3,002	5,621	100	8,723
	<u>\$ 36,247</u>	<u>\$ 54,871</u>	<u>\$ 34,406</u>	<u>\$ 125,524</u>

LOCATION AND NAME	STATUTE	LABOUR BOARD	DEPARTMENT	DEPARTMENT	TOTAL	
		EXPENDITURE	EXPENDITURE	EXPENDITURE		
		ORDINARY	ORDINARY	CAPITAL		
KENORA						
Aubrey East .....	\$	1,086	\$	621	\$ —	\$ 1,707
Britton .....		233		2,274	—	2,507
Colenso, Redvers East and Wabigoon .....		172		478	—	650
Drayton Reserve .....		1,089		689	—	1,778
Eton .....		2,385		2,109	—	4,494
Melgund .....		531		3,824	—	4,355
Mutrie .....		953		2,088	—	3,041
Pellatt No. 1 .....		1,249		1,136	715	3,100
Pellatt No. 2 .....		654		1,348	—	2,002
Redditt .....		318		1,163	2,022	3,503
Rowell .....		198		546	—	744
Rugby .....		1,690		2,976	—	4,666
Southworth .....		2,141		1,388	—	3,529
Umbach UT. N. of .....		418		585	—	1,003
Van Horne .....		3,577		4,448	—	8,025
Vermilion Add'l .....		322		507	—	829
Wabigoon W., Redvers .....		1,447		5,142	—	6,589
Wainwright, Eton Lot 1 .....		1,731		3,411	—	5,142
Zealand No. 1 .....		12,063		12,249	—	24,312
Zealand No. 2 .....		786		1,302	—	2,088
	\$	33,043	\$	48,284	\$ 2,737	\$ 84,064
MANITOULIN						
Mills .....	\$	2,763	\$	1,910	\$ —	\$ 4,673
Robinson .....		9,092		6,966	—	16,058
	\$	11,855	\$	8,876	\$ —	\$ 20,731
MUSKOKA						
Baxter .....	\$	16,500	\$	14,427	\$ —	\$ 30,927
Gibson North .....		505		159	—	664
Go Home Lake .....	Cr.	2,758		622	—	Cr. 2,136
Sinclair .....		178		—	—	178
	\$	14,425	\$	15,208	\$ —	\$ 29,633
NIPISSING						
Badgerow No. 1 .....	\$	856	\$	1,884	\$ 49	\$ 2,789
Dickens .....		1,085		2,751	165	4,001
Falconer, S. Loudon, S.E. Haddo .....		—		676	—	676
Gibbons South .....		—		896	—	896
MacPherson, N. Loudon and N.E. Haddo .....		—		2,957	—	2,957
Murchison .....		166		1,724	—	1,890
Tasso Lake .....		767		1,928	8,185	10,880
West Oxbow Lake .....		804		1,996	—	2,800
	\$	3,678	\$	14,812	\$ 8,399	\$ 26,889

LOCATION AND NAME	STATUTE	DEPARTMENT	DEPARTMENT	TOTAL
	LABOUR BOARD	EXPENDITURE	EXPENDITURE	
	EXPENDITURE	EXPENDITURE	EXPENDITURE	
	ORDINARY	ORDINARY	CAPITAL	EXPENDITURE
PARRY SOUND				
Bethune .....	\$ 5,772	\$ 10,384	\$ 9,915	\$ 26,071
Blair and Mowat .....	3,278	4,410	617	8,305
Conger North .....	4,877	1,376	—	6,253
Croft .....	5,457	9,710	4,588	19,755
Ferguson .....	855	497	—	1,352
Ferrie .....	944	—	—	944
Gurd .....	9,821	9,980	—	19,801
Laurier .....	3,702	5,353	—	9,055
McKenzie and Burpee .....	123	248	—	371
Mills and Hardy .....	12,472	7,324	—	19,796
Monteith .....	7,204	6,198	—	13,402
Patterson .....	6,863	4,870	—	11,733
Pringle .....	9,019	8,903	3,900	21,822
Proudfoot .....	6,503	3,351	9,786	19,640
Spence .....	6,875	10,309	—	17,184
Wallbridge N. and Henvey .....	45	45	—	90
Wallbridge South .....	1,230	2,527	—	3,757
Wilson and McConkey .....	9,377	6,036	—	15,413
	<u>\$ 94,417</u>	<u>\$ 91,521</u>	<u>\$ 28,806</u>	<u>\$214,744</u>
RAINY RIVER				
Dance .....	\$ 1,773	\$ 1,798	\$ —	\$ 3,571
Dewart .....	2,628	1,873	—	4,501
Miscampbell .....	1,927	4,897	—	6,824
Nelles .....	2,062	2,729	1,664	6,455
Sifton .....	1,699	3,070	—	4,769
Spohn .....	222	1,130	—	1,352
Sutherland .....	3,229	3,527	—	6,756
	<u>\$ 13,540</u>	<u>\$ 19,024</u>	<u>\$ 1,664</u>	<u>\$ 34,228</u>
SUDBURY				
Bigwood .....	\$ —	\$ 4,071	\$ —	\$ 4,071
Broder and Dill .....	9,520	11,789	—	21,309
Cartier .....	38	39	—	77
Cleland, Dryden, Awrey and Hawley .....	1,774	5,872	25,229	32,875
Cleland, Dryden and Dill .....	Cr. 246	1,064	592	1,410
Delamere, Hoskin and Cherriman .....	—	3,377	8,600	11,977
Dryden Center .....	130	268	—	398
Falconer, S. Loudon, S.E. Haddo .....	—	75	—	75
Foleyet .....	441	280	—	721
Foster and Truman .....	1,152	Cr. 103	—	1,049
Henry .....	2,439	1,585	—	4,024
Loughrin S. Quarter .....	49	49	—	98
MacLennan East .....	2,478	3,766	—	6,244
MacLennan West .....	951	1,895	1,021	3,867
Merritt .....	3,002	2,225	—	5,227
Scollard .....	2,206	405	—	2,611
Street, Scadding and Rathburn	4,587	6,106	—	10,693
	<u>\$ 28,521</u>	<u>\$ 42,763</u>	<u>\$ 35,442</u>	<u>\$106,726</u>



LOCATION AND NAME	STATUTE LABOUR BOARD EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>THUNDER BAY</b>				
Armstrong .....	\$ —	\$ 3,148	\$Cr. 253	\$ 2,895
Dawson Road Lots .....	—	1,191	42	1,233
Devon .....	3,349	3,808	—	7,157
Forbes .....	—	125	—	125
Fowler .....	—	142	—	142
Goldie .....	—	2,445	—	2,445
Jacques .....	—	1,100	—	1,100
Kilkenny .....	—	69	—	69
Lyon .....	—	696	—	696
Marks .....	—	867	—	867
Rosspport .....	—	159	—	159
Scoble .....	—	2,927	—	2,927
Stirling .....	—	1,419	—	1,419
Strange .....	—	1,015	—	1,015
Upsala .....	—	1,589	—	1,589
	<u>\$ 3,349</u>	<u>\$ 20,700</u>	<u>\$Cr. 211</u>	<u>\$ 23,838</u>
<b>TIMISKAMING</b>				
Bayly .....	\$ 1,773	\$ 754	\$ —	\$ 2,527
Benoit and Maisonville .....	2,522	2,163	—	4,685
Cairo .....	864	604	—	1,468
Cane .....	5,307	3,664	—	8,971
Eby and Blaine .....	2,771	2,441	—	5,212
Eby North .....	429	205	1,439	2,073
Grenfell .....	542	689	—	1,231
Henwood .....	5,710	5,085	—	10,795
Ingram .....	5,772	2,908	8,161	16,841
Keefer .....	1,370	725	—	2,095
Lebel, Harvey and Kirkland ....	639	213	—	852
Lebel, King and Kirkland .....	2,053	2,036	—	4,089
Marquis N. and Otto S.W. ....	2,366	3,578	—	5,944
Marquis S. ....	1,016	972	—	1,988
Marter .....	3,894	4,061	2,743	10,698
Nordica, McEvay, McCann ....	2,477	2,464	—	4,941
Ossian East ½ .....	1,206	78	1,379	2,663
Otto .....	—	Cr. 419	2,492	2,073
Pacaud .....	2,089	542	—	2,631
Pacaud and Catharine .....	1,055	1,111	—	2,166
Savard .....	2,735	6,358	467	9,560
Sharpe .....	1,497	2,717	—	4,214
	<u>\$ 48,087</u>	<u>\$ 42,949</u>	<u>\$ 16,681</u>	<u>\$107,717</u>
<b>TOTAL STATUTE LABOUR</b>				
BOARD EXPENDITURES .....	<u>\$299,289</u>	<u>\$380,848</u>	<u>\$146,144</u>	<u>\$826,281</u>

## APPENDIX No. 4

**Unincorporated Townships Local Road Board Expenditure by Territorial Districts**  
**(Part XII, The Highway Improvement Act)**

**For Year Ending March 31, 1968**

LOCATION AND NAME	LOCAL ROAD BOARD		DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
	EXPENDITURE (DEPOSIT) ORDINARY	DEPARTMENT EXPENDITURE ORDINARY		
ALGOMA				
Aberdeen and McMahon .....	\$ 2,425	\$ 4,471	\$ 23,289	\$ 30,185
Colonization .....	200	822	—	1,022
Fenwick Et Al .....	4,500	11,558	3,110	19,168
Galbraith — Morin .....	900	6,535	7,428	14,863
Gaudette and Hodgins .....	1,950	4,716	533	7,199
Hawk Junction .....	1,675	6,825	—	8,500
Lewis and Spragge .....	1,500	2,073	—	3,573
Patton and Montgomery .....	900	3,422	1,373	5,695
Plummer and Rose .....	3,350	4,435	23,794	31,579
Spanish .....	5,700	9,257	2,736	17,693
Striker .....	1,000	2,011	—	3,011
Vankoughnet and Aweres .....	2,900	4,098	11,037	18,035
Whiskey Lake .....	273	691	1,982	2,946
	<u>\$ 27,273</u>	<u>\$ 60,914</u>	<u>\$ 75,282</u>	<u>\$163,469</u>
COCHRANE				
Coppell .....	\$ 1,500	\$ 4,279	\$ —	\$ 5,779
Fournier .....	1,700	6,955	3,976	12,631
Frederickhouse .....	1,950	5,907	4,666	12,523
Hallebourg .....	3,000	6,365	—	9,365
Hunta .....	900	4,985	17,421	23,306
Norembega .....	800	589	—	1,389
Opastika .....	2,500	6,303	1,220	10,023
Sheraton and Macklem .....	1,600	5,192	—	6,792
Tunis .....	7,640	Cr. 6,995	—	645
Val-Rita-Harty .....	600	22,586	40,494	63,680
	<u>\$ 22,190</u>	<u>\$ 56,166</u>	<u>\$ 67,777</u>	<u>\$146,133</u>
KENORA				
Abrams Lake .....	\$ 300	\$ 287	\$ —	\$ 587
Blindfold .....	450	1,821	—	2,271
Ena Lake .....	380	1,127	—	1,507
Inglis Lake .....	1,400	4,682	—	6,082
Kendall Inlet .....	600	1,816	—	2,416
Kenricia .....	425	2,088	—	2,513
Moose Horne .....	555	1,688	—	2,243
Rush Bay — Woodchuck .....	2,000	9,467	—	11,467
Sherwood Lake .....	2,000	7,942	—	9,942
White Moose .....	500	2,231	—	2,731
	<u>\$ 8,610</u>	<u>\$ 33,149</u>	<u>\$ —</u>	<u>\$ 41,759</u>

LOCATION AND NAME	LOCAL ROAD BOARD			
	EXPENDITURE (DEPOSIT)	DEPARTMENT	DEPARTMENT	TOTAL EXPENDITURE
	ORDINARY	EXPENDITURE ORDINARY	EXPENDITURE CAPITAL	
MANITOULIN				
Campbell .....	\$ 5,100	\$ 7,324	\$ 1,185	\$ 13,609
Dawson .....	2,150	3,926	—	6,076
	<u>\$ 7,250</u>	<u>\$ 11,250</u>	<u>\$ 1,185</u>	<u>\$ 19,685</u>
MUSKOKA				
Hiawatha .....	\$ 425	\$ 1,380	\$ 972	\$ 2,777
Sinclair .....	4,100	8,601	—	12,701
South Gibson .....	2,267	8,364	—	10,631
	<u>\$ 6,792</u>	<u>\$ 18,345</u>	<u>\$ 972</u>	<u>\$ 26,109</u>
NIPISSING				
Badgerow No. 2 .....	\$ 800	\$ 2,800	\$ 3,433	\$ 7,033
Ballantyne and Laurier .....	375	773	611	1,759
Bastedo .....	200	782	—	982
Crerar and N.W. Gibbons .....	1,900	5,294	—	7,194
Falconer Et Al .....	2,333	8,531	6,898	17,762
Gibbons .....	900	529	—	1,429
Grant — Fell .....	1,600	7,337	6,961	15,898
Hay Lake .....	480	1,250	—	1,730
Hugel and S.W. Badgerow .....	2,650	7,503	16,264	26,417
Kirkpatrick .....	3,000	6,267	12,572	21,839
MacPherson .....	2,192	7,377	15,194	24,763
North McKenzie Lake .....	735	2,165	500	3,400
Phelps .....	5,000	11,506	—	16,506
Sabine .....	540	1,594	500	2,634
South McKenzie Lake .....	215	745	690	1,650
Tasso Lake .....	—	185	—	185
Thorne .....	900	194	—	1,094
Tonomo Lake .....	—	—	18,679	18,679
Wyse — Poitras .....	125	315	8,851	9,291
	<u>\$ 23,945</u>	<u>\$ 65,147</u>	<u>\$ 91,153</u>	<u>\$180,245</u>
PARRY SOUND				
Ahmic Lake .....	\$ 1,500	\$ 6,717	\$ 18,255	\$ 26,472
Ballantyne and Laurier .....	125	258	13,200	13,583
Britt .....	5,500	9,700	25	15,225
East Bear Lake .....	350	859	—	1,209
Ferguson .....	2,000	4,513	2,525	9,038
Ferrie .....	150	1,174	—	1,324
Lount .....	2,400	10,350	1,361	14,111
McKenzie .....	4,244	13,004	3,283	20,531
Point-Au-Baril .....	900	2,986	—	3,886
Proudfoot .....	1,500	Cr. 1,500	—	—
South Conger .....	4,400	5,411	—	9,811
	<u>\$ 23,069</u>	<u>\$ 53,472</u>	<u>\$ 38,649</u>	<u>\$115,190</u>
RAINY RIVER				
Marion Lake .....	\$ 160	\$ 387	\$ 1,072	\$ 1,619
Reef Point .....	900	2,859	—	3,759
	<u>\$ 1,060</u>	<u>\$ 3,246</u>	<u>\$ 1,072</u>	<u>\$ 5,378</u>

LOCATION AND NAME	LOCAL ROAD BOARD			TOTAL EXPENDITURE
	EXPENDITURE (DEPOSIT) ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	
SUDBURY				
Armstrong Lake .....	\$ 620	\$ 1,323	\$ —	\$ 1,943
Bigwood, Delamere and Hoskin .....	6,000	8,443	8,605	23,048
Burwash — Hendrie .....	2,500	6,502	1,854	10,856
Cartier .....	1,700	3,122	—	4,822
Dieppe .....	—	65	—	65
Dill Lake .....	245	488	500	1,233
Dill — Secord .....	780	2,988	8,733	12,501
Downes Lake .....	200	972	—	1,172
Dry Pine Bay .....	1,500	4,633	—	6,133
Dryden South .....	390	965	11,733	13,088
Fairbank Lake East .....	3,200	4,721	—	7,921
Falconer Et Al .....	1,167	Cr. 473	440	1,134
Hartley Bay .....	777	3,434	—	4,211
Hess .....	250	1,089	—	1,339
Long Lake .....	5,500	13,689	3,556	22,745
Lorne .....	3,400	9,327	14,484	27,211
Loughrin .....	400	2,479	1,997	4,876
Louise .....	3,940	9,099	5,117	18,156
MacPherson .....	1,096	Cr. 697	633	1,032
Ministic Lake .....	470	2,443	—	2,913
Norman Townsite .....	1,000	2,927	—	3,927
Shakespeare .....	925	1,134	68,059	70,118
St. Cloud .....	1,190	4,319	1,295	6,804
Sunnyside .....	5,500	15,265	—	20,765
Wanapitei Lake — West Bay ..	235	595	—	830
	<u>\$ 42,985</u>	<u>\$ 98,852</u>	<u>\$ 127,006</u>	<u>\$ 268,843</u>

**THUNDER BAY**

Armstrong .....	\$ 550	\$ 77	\$ —	\$ 627
Beaver Bay .....	769	2,541	—	3,310
Camp 25 .....	224	584	—	808
Crescent Point .....	160	606	—	766
Dawson Road .....	3,000	9,745	5,233	17,978
Forbes .....	1,800	12,414	4,918	19,132
Fowler .....	3,500	16,528	12,041	32,069
Goldie .....	200	1,043	—	1,243
Gorham .....	9,000	23,822	8,765	41,587
Hardwick .....	600	2,953	5,038	8,591
Inwood .....	2,900	12,003	9,130	24,033
Jacques .....	3,150	12,127	3,976	19,253
Kabaigon Bay .....	325	1,377	—	1,702
Lybster .....	3,700	7,290	5,257	16,247
Lyon .....	500	3,359	—	3,859
MacDiarmid .....	250	Cr. 56	5,061	5,255
Marks .....	1,100	5,761	7,247	14,108
Pearson .....	1,900	5,671	5,186	12,757
Pine Ridge .....	143	507	—	650
Portage Bay .....	143	839	—	982
Rinta's .....	100	Cr. 152	—	Cr. 52
Rossmere Bay .....	345	1,377	—	1,722
Rossport .....	—	18	—	18
Savant Lake .....	235	473	—	708
Scoble .....	3,000	8,128	5,221	16,349
Shebandowan Lake .....	435	818	—	1,253
Sibley .....	1,500	4,637	5,063	11,200



LOCATION AND NAME	LOCAL ROAD BOARD			TOTAL EXPENDITURE
	EXPENDITURE (DEPOSIT) ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	
Stirling .....	1,000	8,904	—	9,904
Strange .....	910	4,156	4,120	9,186
Sunny Slopes .....	195	245	—	440
Upsala .....	2,050	6,258	4,907	13,215
Ware .....	8,500	25,617	17,744	51,861
West Loon Lake .....	325	1,168	—	1,493
	<u>\$ 52,509</u>	<u>\$180,838</u>	<u>\$108,907</u>	<u>\$342,254</u>
TIMISKAMING				
Beauchamp .....	\$ 2,200	\$ 6,987	\$ 2,782	\$ 11,969
Henwood .....	—	1,078	—	1,078
Otto .....	2,640	7,123	597	10,360
Robillard .....	3,500	9,070	—	12,570
	<u>\$ 8,340</u>	<u>\$ 24,258</u>	<u>\$ 3,379</u>	<u>\$ 35,977</u>
TOTAL LOCAL BOARD EXPENDITURES .....	<u>\$224,023</u>	<u>\$605,637</u>	<u>\$515,382</u>	<u>\$1,345,042</u>

## APPENDIX No. 5

**Unincorporated Townships Special Road Expenditure for Settlers by Territorial Districts**  
**(Part XII, The Highway Improvement Act)**

**For Year Ending March 31, 1968**

LOCATION AND NAME	LOCAL CONTRIBUTION ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>ALGOMA</b>				
Aweres .....	\$ 170	\$ 153	\$ —	\$ 323
Cobden .....	16	16	—	32
Fisher .....	11	10	—	21
Grasett .....	31	31	752	814
Haughton .....	—	—	1,411	1,411
Herrick .....	11	10	—	21
Kehoe .....	80	80	—	160
Kirkwood .....	47	47	—	94
Parkinson .....	146	133	—	279
Shedden .....	22	22	—	44
Wells .....	23	22	—	45
	<u>\$ 557</u>	<u>\$ 524</u>	<u>\$ 2,163</u>	<u>\$ 3,244</u>
<b>COCHRANE</b>				
Boyce .....	\$ —	\$ 167	\$ —	\$ 167
Clavet .....	—	297	—	297
Colquhoun .....	64	64	—	128
Eilber .....	70	70	—	140
Matheson .....	25	33	—	58
Munro .....	573	573	—	1,146
Owens .....	168	168	—	336
Warden .....	—	563	—	563
	<u>\$ 900</u>	<u>\$ 1,935</u>	<u>\$ —</u>	<u>\$ 2,835</u>
<b>KENORA</b>				
Boys .....	\$ 290	\$ 290	\$ —	\$ 580
Bradshaw .....	29	29	—	58
Buller .....	80	80	—	160
Drayton .....	101	101	—	202
Ewart .....	554	554	—	1,108
Gundy .....	878	878	—	1,756
Kirkup .....	54	54	—	108
Pellatt .....	815	815	—	1,630
Slaght .....	3	3	—	6
Smellie .....	1,618	1,618	—	3,236
Southworth .....	265	265	—	530
	<u>\$ 4,687</u>	<u>\$ 4,687</u>	<u>\$ —</u>	<u>\$ 9,374</u>

LOCATION AND NAME	LOCAL CONTRIBUTION ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>NIPISSING</b>				
Lyman .....	\$ 43	\$ 43	\$ —	\$ 86
Merrick .....	40	40	—	80
Murchison .....	111	110	—	221
Olive .....	5,116	5,116	—	10,232
Pedley .....	181	181	—	362
Poitras .....	48	48	—	96
Sisk .....	147	146	—	293
Stewart .....	17	17	—	34
Strathcona .....	23	23	—	46
Strathy .....	204	204	—	408
	<u>\$ 5,930</u>	<u>\$ 5,928</u>	<u>\$ —</u>	<u>\$ 11,858</u>
<b>PARRY SOUND</b>				
Burton .....	\$ 125	\$ 119	\$ —	\$ 244
Shawanaga .....	100	99	—	199
Wallbridge .....	222	257	—	479
	<u>\$ 447</u>	<u>\$ 475</u>	<u>\$ —</u>	<u>\$ 922</u>
<b>RAINY RIVER</b>				
Bennett .....	\$ 17	\$ 17	\$ 1,161	\$ 1,195
Farrington .....	173	173	—	346
Fleming .....	313	314	—	627
	<u>\$ 503</u>	<u>\$ 504</u>	<u>\$ 1,161</u>	<u>\$ 2,168</u>
<b>SUDBURY</b>				
Awrey .....	\$ 281	\$ 280	\$ —	\$ 561
Broder .....	264	263	—	527
Burwash .....	47	47	—	94
Cascaden .....	74	74	—	148
Cleland .....	185	185	—	370
Curtin .....	715	715	—	1,430
Davis .....	20	20	—	40
Dill .....	162	162	—	324
Dryden .....	346	346	—	692
Fairbank .....	150	149	—	299
Janes .....	159	158	—	317
Lumsden .....	986	987	—	1,973
Mongowin .....	626	626	—	1,252
Morgan .....	14	14	264	292
Noble .....	499	1,972	—	2,471
Secord .....	431	431	—	862
Street .....	314	314	—	628
Togo .....	499	1,972	—	2,471
Trill .....	299	299	—	598
	<u>\$ 6,071</u>	<u>\$ 9,014</u>	<u>\$ 264</u>	<u>\$ 15,349</u>

LOCATION AND NAME	LOCAL CONTRIBUTION ORDINARY	DEPARTMENT EXPENDITURE ORDINARY	DEPARTMENT EXPENDITURE CAPITAL	TOTAL EXPENDITURE
<b>THUNDER BAY</b>				
Blackwell .....	\$ 6	\$ 6	\$ —	\$ 12
Conacher .....	12	12	—	24
Golding .....	4	4	—	8
Sibley .....	5	6	—	11
	<u>\$ 27</u>	<u>\$ 28</u>	<u>\$ —</u>	<u>\$ 55</u>
<b>TIMISKAMING</b>				
Barber .....	\$ 94	\$ 128	\$ —	\$ 222
Bryce .....	—	—	186	186
Cairo .....	5,554	5,554	—	11,108
Charters .....	—	227	—	227
Corkill .....	227	228	—	455
Firstbrook .....	52	52	—	104
Grenfell .....	156	156	—	312
Haultain .....	—	669	—	669
Hillary .....	109	109	—	218
Lawson .....	228	228	—	456
Leith .....	—	227	—	227
Milner .....	22	22	—	44
Nicol .....	710	710	—	1,420
Pense .....	46	46	—	92
Sharpe .....	65	65	—	130
Tudhope .....	—	13	—	13
	<u>\$ 7,263</u>	<u>\$ 8,434</u>	<u>\$ 186</u>	<u>\$ 15,883</u>
<b>TOTAL ROAD EXPENDITURES FOR SETTLERS .....</b>	<u><u>\$ 26,385</u></u>	<u><u>\$ 31,529</u></u>	<u><u>\$ 3,774</u></u>	<u><u>\$ 61,688</u></u>



# APENNDIX No. 6

## Unincorporated Townships Special Road Expenditure for Indian Reserves by Territorial Districts (Part XII, The Highway Improvement Act)

For Year Ending March 31, 1968

LOCATION AND NAME	INDIAN RESERVE EXPENDITURE ORDINARY	ORDINARY DEPARTMENT EXPENDITURE ORDINARY	TOTAL EXPENDITURE TOTAL EXPENDITURE
<b>COCHRANE</b>			
Moose Factory 68 .....	\$ 713	\$ 713	\$ 1,426
<b>KENORA</b>			
Eagle Lake 27 .....	\$ 239	\$ 239	\$ 478
Islington 29 .....	308	308	616
Kenora 38B .....	280	140	420
Osnaburg 63B .....	35	35	70
Shoal Lake 39A .....	625	625	1,250
Wabigoon Lake 27 .....	265	265	530
Whitefish Bay 32A .....	1,133	1,133	2,266
Whitefish Bay 34A .....	191	191	382
	<u>\$ 3,076</u>	<u>\$ 2,936</u>	<u>\$ 6,012</u>
<b>PARRY SOUND</b>			
Dokis 9 .....	\$ 27,655	\$ 27,655	\$ 55,310
<b>RAINY RIVER</b>			
Big Island Mainland 93 .....	\$ 19	\$ 19	\$ 38
Manitou Rapids 11 .....	2,271	2,271	4,542
Rainy Lake 16A .....	115	115	230
Rainy Lake 17A .....	254	254	508
Rainy Lake 18B .....	115	115	230
Rainy Lake 26A .....	115	115	230
Seine River 23A .....	721	721	1,442
	<u>\$ 3,610</u>	<u>\$ 3,610</u>	<u>\$ 7,220</u>
<b>SUDBURY</b>			
Mattagami 71 .....	\$ 1,972	\$ 1,972	\$ 3,944
<b>THUNDER BAY</b>			
Osnaburg 63A .....	\$ 35	\$ 35	\$ 70
<b>TIMISKAMING</b>			
Matachewan 72 .....	\$ 5,554	\$ 5,554	\$ 11,108
<b>TOTAL ROAD EXPENDITURES FOR INDIAN RESERVES</b> .....	<u>\$ 42,615</u>	<u>\$ 42,475</u>	<u>\$ 85,090</u>

**APPENDIX No. 7**  
**Department Expenditures by Highways**  
**April 1, 1967 to March 31, 1968**

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
<b>KING'S HIGHWAYS</b>					
2	Quebec Border–Windsor .....	428.6	\$5,223,201	\$1,751,452	\$6,974,653
2A	Hwy. 401 (M.-C.F.)–Hwy. 2 (Toronto) .....	1.3	356	13,869	14,225
2S	Brockville–Gananoque .....	9.6	524	40,482	41,006
3	Fort Erie–Windsor .....	239.1	1,653,013	900,405	2,553,418
3A	Hwy. 58 (Welland)–Hwy. 3 .....	9.5	1,790	46,259	48,049
3B	Hwy. 3–Windsor .....	—	—	1,755	1,755
3C	Fort Erie–Ridgeway .....	6.8	—	42,323	42,323
4	Port Stanley–Hwy. 10 (Flesherton) ....	130.5	1,952,369	520,084	2,472,453
5	Toronto–Paris .....	54.6	162,208	373,520	535,728
6	Port Dover–Tobermory .....	201.7	1,337,352	711,013	2,048,365
7	Ottawa–Sarnia .....	438.6	4,905,544	1,835,474	6,741,018
7A	Hwy. 115–Hwy. 12 (Manchester) .....	30.7	443,175	121,309	564,484
8	Niagara Falls–Goderich [7] .....	98.3	9,860,773	439,281	10,300,054
8A	Queenston–St. Davids .....	2.4	140	14,175	14,315
9	Hwy. 11–Kincardine .....	108.0	443,186	423,826	867,012
10	Port Credit–Owen Sound .....	89.1	2,197,689	469,549	2,667,238
11	Toronto–Rainy River .....	1,187.3	9,313,399	3,834,233	13,147,632
11A	Port Arthur–Jct. Hwys. 11 & 17 .....	20.5	713,395	46,463	759,858
12	Whitby–Hwy. 27 (Midland) [7] .....	69.7	168,301	398,393	566,694
14	Bloomfield–Marmora .....	41.2	24,816	131,256	156,072
15	Kingston–Ottawa [7] .....	84.2	81,995	245,354	327,349
16	Johnstown–Ottawa .....	49.6	1,077,203	172,080	1,249,283
17	Quebec Border–Manitoba Border [11] ..	1,287.9	9,163,782	3,339,126	12,502,908
18	Leamington–Windsor .....	39.0	18,865	98,060	116,925
18A	Kingsville–Hwy. 18 .....	19.4	16,397	38,630	55,027
19	Port Burwell–Hwy. 86 .....	69.1	53,586	205,984	259,570
20	Niagara Falls–Hamilton .....	40.1	464,772	233,384	698,156
21	Hwy. 3–Owen Sound .....	176.1	968,749	499,308	1,468,057
22	London–Hwy. 7 .....	27.5	16,575	68,083	84,658
23	Hwy. 7–Hwy. 9 (Teviotdale) .....	55.9	562,747	169,650	732,397
24	Port Dover–Collingwood .....	121.2	1,331,026	387,146	1,718,172
24A	Paris–Galt .....	14.4	193,022	28,247	221,269
25	Burlington–Hwy. 24 (Ospringe) .....	25.6	82,100	319,202	401,302
26	Barrie–Owen Sound .....	63.8	1,119,785	259,734	1,379,519
27	Metro Toronto–Penetanguishene ....	87.2	5,253,201	509,218	5,762,419
28	Port Hope–Bancroft .....	83.2	1,259,274	310,839	1,570,113
29	Brockville–Arnprior [15] .....	52.6	215,488	127,078	342,566
30	Brighton–Hwy. 7 (Havelock) .....	29.5	245,861	109,745	355,606
31	Morrisburg–Ottawa .....	40.5	329,663	150,291	479,954
32	Gananoque–Hwy. 15 .....	11.3	7,526	43,588	51,114
33	Kingston–Stirling .....	73.8	177,310	256,529	433,839
34	Hwy. 2 (Lancaster)–Hawkesbury .....	34.1	8,066	133,576	141,642
35	Hwy. 401 (Newcastle)–Hwy 60 (Dwight) .....	122.4	724,380	424,394	1,148,774
35A	Fenelon Falls–Hwy. 35 .....	2.0	1,722	5,024	6,746
36	Hwy 28 (Burleigh Falls)–Hwy. 7 (Lindsay) .....	44.3	25,975	103,971	129,946
37	Belleville–Hwy. 7 .....	26.3	554,018	76,723	630,741
38	Hwy. 2 (Kingston)–Hwy. 7 .....	44.1	448,312	123,220	571,532
39	Hwy. 2–Windsor .....	11.1	228	22,400	22,628
40	Chatham–Sarnia .....	46.0	142,622	120,699	263,321

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
41	Napanee-Pembroke .....	132.6	1,580,095	345,365	1,925,460
42	Brockville-Westport [29] .....	31.3	414,752	90,407	505,159
43	Alexandria-Perth .....	87.6	181,598	255,470	437,068
44	Hwy. 17-Hwy. 29 (Almonte) .....	8.6	447	17,608	18,055
45	Cobourg-Norwood .....	31.4	188,803	100,802	289,605
46	Hwy. 7-Hwy. 35 (Coboconk) .....	31.6	228,565	111,748	340,313
47	Hwy. 7 & 12-Hwy. 48 (Ringwood) ....	17.8	120,545	121,184	241,729
48	Toronto (Hwy. 401)-Hwy. 46 [12] .....	63.0	560,283	343,278	903,561
49	Picton-Hwy. 401 [2] .....	13.6	1,153,807	41,402	1,195,209
50	Hwy. 27 (Toronto)-Hwy. 9 .....	18.5	132,372	104,647	237,019
52	Hwy. 2-Wentworth City Line .....	15.4	27,134	58,572	85,706
53	Hwy. 20-Eastwood .....	23.8	17,844	106,790	124,634
54	Cayuga-Cainsville .....	24.7	27,453	126,723	154,176
56	Hwy. 3( Canfield)-Hwy. 53 .....	14.6	2,530	62,198	64,728
57	Hwy. 3A-Bismarck .....	8.9	314	29,103	29,417
58	Port Colborne-St. Catharines .....	14.8	170,144	71,534	241,678
59	Long Point Park-Hwy. 7 & 8 .....	65.6	116,507	175,452	291,959
60	Hwy. 17-Hwy. 11 (Huntsville) .....	146.8	653,113	351,614	1,004,727
61	International Border-Fort William ....	34.2	62,281	55,574	117,855
62	Hwy. 14-Hwy. 41 (Pembroke) .....	146.0	1,772,450	390,980	2,163,430
63	North Bay-Ottawa R. Bridge .....	39.4	1,932,666	107,131	2,039,797
64	Sturgeon Falls-Hwy. 11 .....	81.1	121,996	235,622	357,618
65	Quebec Bdry-Matachewan .....	79.4	85,873	196,793	282,666
66	Quebec Bdry.-Hwy. 65 .....	60.9	142,862	159,447	302,309
67	Hwy. 101-Iroquois Falls .....	22.0	937,373	47,042	984,415
68	South Baymouth-Hwy. 17 .....	79.8	323,301	326,330	649,631
69	Hwy. 12-Capreol .....	197.5	2,694,851	609,243	3,304,094
70	Jct. Hwys. 6 & 21-Hepworth .....	9.1	1,779	24,971	26,750
71	Fort Frances-Hwy. 17 .....	100.0	1,098,475	146,770	1,245,245
72	Hwy. 17-Sioux Lookout .....	42.2	1,612,595	62,891	1,675,486
73	Port Bruce-Dorchester .....	23.6	12,905	51,109	64,014
74	Hwy. 3-Nilestown .....	13.2	794,541	30,383	824,924
76	Hwy. 3-Hwy. 2 (Eagle) .....	11.3	225	21,739	21,964
77	Leamington-Hwy. 401 .....	14.0	21,016	25,539	46,555
78	Hwy. 21-Wallaceburg .....	9.5	5,828	14,747	20,575
79	Hwy. 7-Hwy. 2 (Bothwell) .....	29.8	4,959	79,216	84,175
80	Hwy. 2-Hwy. 40 (Courtright) .....	42.1	175,445	81,077	256,522
81	Delaware-Grand Bend .....	38.0	420,913	95,045	515,958
82	Hwy. 7 (Thedford)-Hwy. 21 .....	5.5	1,292	15,956	17,248
83	Hwy. 23 (Russeldale)-Hwy. 21 .....	24.1	22,863	54,768	77,631
84	Hwy. 4 (Hensall)-Hwy. 21 .....	10.7	6,436	39,538	45,974
85	Kitchener-Elmira .....	8.7	12,332	38,532	50,864
86	Hwy. 7-Amberly .....	78.4	1,026,395	254,567	1,280,962
87	Harriston-Hwy. 86 .....	19.7	13,390	92,384	105,774
88	Bradford-Hwy. 27 .....	5.0	105	21,519	21,624
89	Hwy. 400-Hwy. 23 (Palmerston) .....	63.7	143,374	205,394	348,768
90	Barrie-Angus .....	10.0	4,445	49,927	54,372
91	Stayner-Duntroon .....	5.0	233,282	10,538	243,820
92	Elmvale-Wasaga Beach .....	7.9	452	29,004	29,456
93	Hwy. 11-Hwy. 27 (Waverley) .....	17.5	9,192	67,535	76,727
94	Callander-Hwy. 17 .....	5.5	38,771	16,945	55,716
95	Hornes Point-Hwy. 96 .....	7.1	4,952	17,716	22,668
96	Quebec Head-W. End of Wolfe Is. ....	22.9	2,205	86,673	88,878
97	Hwy. 6-Hickson .....	39.0	6,355	127,647	134,002
98	Blenheim-Windsor .....	53.3	18,246	144,025	162,271
99	Dundas-Hwy. 24 .....	15.9	94,139	63,271	157,410

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
101	Quebec Bdry-Hwy. 17 (Wawa)	289.7	1,836,922	671,091	2,508,013
103	Port Severn-Hwy. 69	29.9	11,107	96,787	107,894
104	Hwy. 9-Grand Valley	1.8	3,900	7,412	11,312
105	Hwy. 17-Red Lake	108.4	1,037,381	122,123	1,159,504
106	Hwy. 28-Hwy. 2 (Welcome)	2.6	3,396	10,298	13,694
107	Hwy. 18-Hwy. 3 (Ruthven)	1.0	—	1,340	1,340
108	Hwy. 17-Hwy. 639 (Quirke Lake)	26.0	492	91,097	91,589
112	Hwy. 11-Hwy. 66 (Swastika)	12.4	7,607	27,400	35,007
114	Maidstone-Hwy. 98	1.2	—	2,040	2,040
115	Hwy. 401 (Newcastle)-Peterborough				
	[35]	17.1	39,166	249,560	288,726
116	Hwy. 72-Hudson	9.9	265,881	24,988	290,869
117	Steeles Ave. (Toronto)-Hwy. 7	1.3	—	5,770	5,770
118	Dorset-Hwy. 69	49.0	1,178,621	106,468	1,285,089
119	Hwy. 17-Richan	13.9	6,628	28,710	35,338
121	Hwy. 28-Fenelon Falls	81.8	58,518	219,074	277,592
122	Q.E.W. (Oakville)-Q.E.W. (N. of Clarkson)	5.1	1,791,473	49,184	1,840,657
123	Hwy. 11-North Bay Airport	4.5	595,989	13,476	609,465
124	Hwy. 69-Hwy. 11 (Sundridge)	49.1	540,777	159,731	700,508
125	Hwy. 105-Red Lake	8.4	390,005	11,600	401,605
126	Hwy. 401-Hwy. 2 (London)	3.2	118,547	26,141	144,688
127	Maynooth-Hwy. 60	27.7	85,485	68,119	153,604
128	Kenora-Redditt	17.7	16,124	43,343	59,467
129	Thessalon-Chapleau	145.6	823,313	361,971	1,185,284
130	Port Arthur-Hwy. 61	18.1	80,837	46,660	127,497
132	Renfrew-Hwy. 41	17.6	808	43,505	44,313
133	Hwy. 33 (Millhaven)-Hwy. 401	6.3	27,500	13,539	41,039
135	Hwy. 401-Hwy. 2 (London)	3.8	3,118	7,797	10,915
136	Hwy. 24-Orangeville	7.8	13,497	32,836	46,333
137	Hwy. 401-Thousand Island Bridge	2.0	—	11,551	11,551
138	Cornwall-Monkland	—	29,762	23,828	53,590
144	Sudbury-Hwy. 101	102.3	4,852,314	176,852	5,029,166
400	Toronto-Coldwater	74.9	714,864	1,369,766	2,084,630
401	(M.-C.F.) Quebec Bdry-Windsor	520.8	30,729,725	4,734,155	35,463,880
402	Hwy. 7-Blue Water Bridge	3.7	737,657	37,122	774,779
403	Burlington-Brantford	14.3	4,640,188	151,686	4,791,874
404	Toronto-Jct. Hwys. 7 & 12	—	21,798	—	21,798
405	Q.E.W.-International Bridge (Queenston)	5.5	10,775	39,591	50,366
406	Hwy. 58-Q.E.W.	3.2	387,212	26,269	413,481
407	Jct. Hwys. 35 & 115-Hwy. 27	—	206,731	—	206,731
416	Johnstown-Ottawa	—	393,564	—	393,564
417	Quebec Bdry-Ottawa	—	522,898	—	522,898
QEW	Toronto-Fort Erie	95.0	17,431,015	1,699,368	19,130,383

TOTAL EXPENDITURE ALLOCATED  
TO KING'S HIGHWAYS

\$151,997,942	\$38,120,137	\$190,118,079
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## SECONDARY HIGHWAYS

500	Denbigh-Bancroft	38.2	\$ 167,025	\$ 152,362	\$ 319,387
501	Hwy. 103-Honey Harbour	9.2	40,422	38,548	78,970
502	Napanee-Marysville	8.7	6,709	19,633	26,342
503	Tory Hill-Kirkfield	76.4	131,221	247,821	379,042
504	Hwy. 620-Apsley	16.3	—	70,597	70,597



Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
505	Hwy. 46-Uphill .....	11.8	11,228	31,679	42,907
506	Plevna-Hwy. 41 .....	20.9	232,439	58,415	290,854
507	Hwy. 28 (Lakefield)-Hwy. 503 .....	39.6	577,909	123,308	701,217
508	Burnstown-Black Donald Mines .....	25.0	35,068	53,392	88,460
509	Hwy. 7-Snow Road Station .....	13.1	22,850	31,549	54,399
510	Magnetawan-Hwy. 124 .....	1.9	—	3,402	3,402
511	Brightside-Hwy. 508 .....	21.4	17,979	28,630	46,609
512	Eganville-Hwy. 60 .....	29.4	25,257	69,080	94,337
513	Hwy. 132-East of Hyndford .....	9.8	4,428	27,084	31,512
514	Hwy. 60-Interlaken .....	10.0	76	38,166	38,242
515	Hwy. 512-Combermere .....	28.0	500,488	86,600	587,088
516	Port Sidney-Windermere .....	16.0	103,209	68,227	171,436
517	Twp. Rd. (Near New Carlow)- Hwy. 62 .....	10.4	—	20,663	20,663
518	Sand Lake-Hwy. 69 .....	54.2	97,376	189,872	287,248
519	Hwy. 121-Redstone Lake .....	34.0	150,861	66,319	217,180
520	Burk's Falls-Ardbeg .....	32.0	24,805	77,262	102,067
522	Hwy. 11-West of Loring .....	48.9	85,990	113,404	199,394
523	Lyell Twp. Line-Hwy. 60 .....	13.5	4,518	33,838	38,356
524	Hwy. 522-Hwy. 534 .....	3.1	174	11,384	11,558
525	Gravenhurst-Muskoka Lake .....	1.5	—	2,931	2,931
526	Hwy. 69-West of Britt .....	2.3	657	10,155	10,812
527	Baysville-Huntsville .....	14.5	187	32,262	32,449
528	Wolseley Bay-Hwy. 64 .....	8.3	190	33,810	34,000
528A	Pine Cove Landing-Hwy. 528 .....	3.3	—	7,863	7,863
529	Hwy. 69-Hwy. 69 (Magnetwan R.) .....	15.7	—	47,852	47,852
529A	Hwy. 529-Bayfield Wharf .....	3.0	814	9,851	10,665
530	Hwy. 519-Hwy. 35 (Carnarvon) .....	12.5	134,590	28,584	163,174
531	Bonfield-Hwy. 17 .....	2.3	63	6,213	6,276
532	Hwy. 11-Hwy. 69 .....	40.4	214,689	90,948	305,637
533	Mattawa-Hwy. 63 .....	31.6	13,928	86,509	100,437
534	Powassan-Restoule .....	21.9	115,166	81,588	196,754
535	Hwy. 64-Riviere Veuve .....	29.9	597,828	75,451	673,279
536	Hwy. 17-Creighton .....	3.8	—	10,179	10,179
537	Hwy. 69-Hwy. 17 (Wahnapitae) .....	12.2	58,363	47,972	106,335
538	Algoma Mines Loop .....	4.1	69,755	8,214	77,969
539	Hwy. 64-Warren .....	24.8	428,503	72,858	501,361
539A	Hwy. 539-Tert. Rd. 805 .....	0.8	—	2,666	2,666
540	Little Current-Meldrum Bay .....	84.9	112,241	223,579	335,820
540A	Hwy. 540-Barrie Island .....	2.5	—	6,523	6,523
541	Sudbury-Skead .....	14.6	29,602	63,549	93,151
541A	Falconbridge-Hwy. 541 .....	1.9	—	4,352	4,352
542	Hwy. 68-Gore Bay .....	44.6	118,424	133,925	252,349
542A	Hwy. 542-Tehkummah .....	1.4	—	3,083	3,083
543	Long Lake-Sudbury .....	5.0	177,568	12,884	190,452
544	Levack-Hwy. 144 .....	1.3	310	6,063	6,373
545	Hwy. 541-Milnet .....	17.0	1,124	40,073	41,197
546	Hwy. 17-Mississagi Prov. Park .....	47.8	41,119	111,232	152,351
547	Hwy. 101-Hawk Jct. ....	3.8	1,867	6,657	8,524
548	Hilton Beach-Hwy. 17 .....	45.6	112,785	92,269	205,054
549	Lake Panache-Hwy. 17 .....	9.1	73,807	49,930	123,737
550	Sault Ste. Marie-Gros Cap .....	6.5	35,234	23,677	58,911
551	Providence Bay-Hwy. 540 .....	11.6	28,263	41,165	69,428
552	Hwy. 556-Twp. Rd. (E. of Hwy. 17) ..	11.6	50,835	35,970	86,805
552A	Hwy. 552-Hwy. 17 .....	1.0	—	3,111	3,111

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
553	Massey-Richie Falls Camp .....	48.7	2,134	81,918	84,052
554	Hwy. 546-Hwy. 129 .....	10.9	8,744	26,229	34,973
555	Magog Lake-Hwy. 557 .....	7.0	1,936	17,885	19,821
556	Hwy. 17 (Heyden)-Christina Mine Rd. ....	26.3	134,393	68,413	202,806
557	Blind River-Matinenda Lake .....	12.6	409	39,327	39,736
558	Haileybury-E. Bank of Montreal R. ...	16.9	2,759	36,214	38,973
559	Hwy. 69 (Nobel)-Hwy. 69 .....	13.5	1,052	31,814	32,866
560	Hwy. 11-Hwy. 144 (S. of Gogama) ....	140.1	139,348	368,356	507,704
560A	Westree-Hwy. 560 .....	6.2	—	17,842	17,842
561	Bruce Mines-Hwy. 638 .....	13.5	13,739	56,554	70,293
562	Hwy. (Thornloe)-Hwy. 65 .....	9.0	—	27,461	27,461
563	Batchawana-Hwy. 17 .....	3.4	12,665	11,958	24,623
564	Blanche R. Br.-Hwy. 112 .....	9.8	14,632	17,337	31,969
565	Pte. Aux Pins-Hwy. 550 .....	1.0	41	2,919	2,960
566	Matachewan-Ashley Mine .....	16.4	—	26,669	26,669
567	E. of Silver Centre-N. Cobalt .....	21.7	1,808	59,548	61,356
568	Hwy. 11-Kenogami .....	1.0	—	5,226	5,226
569	Hwy. 11-Jct. Hwys. 11 & 624 .....	17.5	35,715	43,251	78,966
570	Sesekinika-Hwy. 11 .....	1.9	—	3,739	3,739
571	Hwy. 562-Earlton .....	3.7	—	9,588	9,588
572	Hwy. 11 (Ramore)-Hwy. 101 .....	10.3	1,398	27,720	29,118
573	Charlton-Hwy. 11 .....	12.5	1,041	26,723	27,764
574	Twp. Rd. (S. of Norembega)-Hwy. 579 ..	18.0	38,076	88,379	126,455
575	Hwy. 101 (Night Hawk Centre) Southerly .....	3.0	—	3,142	3,142
576	Hwy. 101-Kam-Kotia Mine .....	15.5	732,259	26,130	758,389
577	Hwy. 101-Iroquois Falls .....	15.6	96,973	53,579	150,552
578	Iroquois Falls-Hwy. 11 .....	5.1	48,999	18,313	67,312
579	Cochrane-Gardiner .....	21.8	18,559	86,430	104,989
580	Hwy. 11-Lake Nipigon .....	7.7	13	8,685	8,698
581	Hwy. 11-Remi Lake .....	3.3	349,133	7,645	356,778
582	Hurkett-Hwy. 17 .....	4.0	21	9,389	9,410
583	Mead-Lac Ste. Therese .....	30.1	49,280	137,492	186,772
584	Hardrock Mine-Nakina .....	42.5	17,978	77,502	95,480
584A	Hwy. 11-Hwy. 584 .....	2.4	—	3,820	3,820
585	Hwy. 11-Pine Portage .....	22.9	23	41,160	41,183
586	Hwy. 11-Lower Shebandowan Lake ..	3.3	2,968	4,143	7,111
587	Silver Islet-Hwy. 11 & 17 .....	26.0	40,134	36,885	77,019
588	Stanley-Round Lake Rd. ....	34.8	104,855	107,331	212,186
589	Hwy. 11A & 17A-Dog Lake Rd. ....	18.7	16,812	29,963	46,775
590	Hwy. 130-Hwy. 588 (Nolalu) .....	25.1	20,156	69,420	89,576
591	Hwy. 589 Northerly .....	4.9	—	7,492	7,492
592	Hwy. 11 (Novar)-Hwy. 11 .....	10.2	1,323	48,790	50,113
593	Hwy. 61-Hwy. 588 (Nolalu) .....	29.9	13	42,915	42,928
594	Dryden-Hwy. 17 .....	21.4	—	80,180	80,180
595	Hwy. 597-Hwy. 590 .....	25.3	23,065	29,728	52,793
596	Kenora-N. of Minaki .....	29.6	134,723	60,419	195,142
597	Twp. Rd.-Hwy. 608 .....	9.5	5,495	16,098	21,593
598	Hwy. 604-Hwy. 128 .....	2.7	126	6,864	6,990
599	Igance-Tert. Rd. 808 .....	185.2	30,799	242,346	273,145
600	Hwy. 71-Rainy River .....	53.9	2,457	111,153	113,610
601	Hwy. 17-Dryden .....	15.5	6,606	40,217	46,823
602	Fort Frances-Emo .....	29.1	73,861	39,139	113,000
603	Hwy. 17-Dymont .....	2.8	—	12,630	12,630

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
604	Hwy. 17-Kenora Airport .....	5.5	3,820	8,411	12,231
605	Hwy. 17-Rugby Lake .....	7.7	395	14,564	14,959
606	Hwy. 17-Markstay .....	1.0	—	1,694	1,694
607	Hwy. 69-Hwy. 64 .....	5.9	68,103	28,971	97,074
607A	French River-Hwy. 607 .....	1.5	—	3,113	3,113
608	Hwy. 61-Hwy. 595 .....	11.9	21,098	30,537	51,635
609	Hwy. 105-Clay Lake .....	10.1	1,412	13,829	15,241
610	Hwy. 67-Hwy. 101 (Hoyle) .....	13.3	57,039	40,107	97,146
611	Hwy. 602-Burriss/Miscampbell Twp. Line .....	12.5	21,723	21,552	43,275
612	Hwy. 103 (Mactier)-Hwy. 69 .....	7.0	—	18,107	18,107
613	Hwy. 602-Lake Despair .....	25.5	46,813	55,450	102,263
614	Hwy. 17-Manitouwadge .....	36.4	1,301,147	97,751	1,398,898
615	Hwy. 17-Burditt Lake .....	13.6	12,520	28,084	40,604
616	Hwy. 101-Palomar .....	2.0	5	3,231	3,236
617	Hwy. 11 (Stratton)-Hwy. 600 .....	14.4	18,595	43,781	62,376
618	Red Lake-Madsen .....	8.8	261	11,594	11,855
619	Hwy. 11 (Pinewood)-Hwy. 621 .....	25.3	35,230	38,194	73,424
620	Hwy. 62-Hwy. 28 (Apsley) .....	25.4	90,395	93,451	183,846
620A	Hwy. 620-Hwy. 28 .....	0.3	—	890	890
621	Hwy. 11-Lake of the Woods .....	32.8	1,827	95,494	97,321
622	Hwy. 11 (Atikokan) Northerly .....	6.8	20,303	11,682	31,985
623	Hwy. 11-Sapawe .....	3.1	—	5,461	5,461
624	Hwy. 11-Larder Lake .....	26.3	148,833	50,521	199,354
625	Caramat-Hwy. 11 .....	20.0	24,406	79,637	104,043
626	Matheson-Porquis Jct. ....	19.8	383	31,189	31,572
627	Heron Bay-Hwy. 17 .....	5.2	7	13,233	13,240
628	Red Rock-Hwy. 11 & 17 .....	4.4	39,731	7,869	47,600
629	Timmins-Timmins Airport .....	6.7	49,061	22,462	71,523
630	Kiosk-Hwy. 17 .....	18.1	89,437	46,702	136,139
631	S. of Hornepayne-Hwy. 11 .....	56.3	554,390	127,141	681,531
632	Hwy. 118-Rosseau .....	16.0	154,210	44,108	198,318
633	Hwy. 11-Kawene .....	3.7	—	8,631	8,631
634	Val Caron-Hwy. 144 .....	11.2	725,509	22,332	747,841
635	Hwy. 17-Ottawa River Bridge .....	1.6	—	3,203	3,203
636	Hwy 11-Frederickhouse .....	3.0	2,802	9,582	12,384
637	Hwy. 69-Killarney .....	41.8	14,808	194,562	209,370
638	Dunns Valley-Echo Bay .....	23.9	115,756	108,275	224,031
639	Hwy. 108-Hwy. 546 .....	14.3	14,658	28,186	42,844
640	Hwy. 571-Earlton Airport Entrance ..	1.7	—	4,931	4,931
641	Hwy. 17-Pellatt .....	8.4	—	21,178	21,178
642	Alcona-Sioux Lookout .....	11.3	6,978	18,967	25,945
643	Hwy. 584-Twp. Rd. to Cavell .....	12.0	59	12,498	12,557
644	Hwy. 69 (Pte. Au Baril) Easterly .....	0.6	—	1,898	1,898
645	Hwy. 529-Bing Inlet .....	2.5	—	10,796	10,796
646	Pickle Crow-Central Patricia .....	6.7	87	4,015	4,102
647	Hwy. 17-Blue Lake Prov. Park .....	5.5	416	11,976	12,392
648	Dyno Mine-W. Jct. Hwy. 121 .....	23.5	8,523	81,932	90,455
649	Bobcaygeon-Hwy. 121 .....	10.9	7,561	25,716	33,277
650	O.N.R. Right of Way-Hwy. 112 .....	4.7	1,684	9,751	11,435
651	Hwy. 101-Missanabie .....	9.1	745,387	8,865	754,252
652	Wade Lake-Hwy. 574 .....	11.0	20,397	15,102	35,499
653	Portage du Forte Br.-Hwy. 17 .....	5.5	434,562	14,896	449,458

Hwy. No.	LOCATION	MILE- AGE	CONSTRUCTION	MAINTENANCE	TOTAL
654	Hwy. 11-Nipissing .....	14.2	64,480	45,276	109,756
655	Timmins-Wark/Kidd Twp. Bdy .....	13.4	6,405	27,988	34,393
656	Hwy. 533 Northerly .....	2.6	735	3,841	4,576
657	Goldpines-Hwy. 105 .....	3.9	6,726	5,701	12,427
658	Hwy. 17-Fairbank Prov. Park .....	12.2	24,634	34,228	58,862
659	Hwy. 604-Hwy. 128 .....	12.3	1,415	23,046	24,461
660	Bala-Hwy. 103 .....	11.2	16,408	49,867	66,275

TOTAL EXPENDITURE ALLOCATED  
TO SECONDARY HIGHWAYS .....

\$11,825,599      \$7,625,302      \$19,450,901

TERTIARY ROADS

800	Hwy. 11 & 17-Cheeseman Lake .....	63.5	\$ 40,196	\$ 31,225	\$ 71,421
801	Hwy. 11-Namewananikan River .....	8.8	3,518	10,215	13,733
802	Hwy. 11-Burchell Lake .....	8.5	8,456	13,137	21,593
804	Hwy. 105-Lower Manitou Falls .....	12.8	—	32,752	32,752
805	Hwy. 539A (River Valley)-Pond Lake .....	35.0	10,382	19,306	29,688
806	Hwy. 545-Sellwood .....	4.2	—	6,044	6,044
807	Smooth Rock Falls-Fraserdale .....	44.0	155	50,272	50,427
808	Hwy. 646-Otoskwin R. ....	36.0	—	15,161	15,161

TOTAL EXPENDITURE ALLOCATED  
TO TERTIARY ROADS .....

\$ 62,707      \$ 178,112      \$ 240,819

ACCESS AND INDUSTRIAL ROADS

Algom-Nordic Mine Road .....	\$	—	\$ 1,886	\$ 1,886
Caramat-Manitouwadge .....	—		41,833	41,833
Denison Mine Road .....	—		2,968	2,968
Milliken Mine Road .....	—		3,129	3,129
Old Garden River Road .....		9,659	—	9,659
Panel Mine Road .....	—		6,111	6,111
Raleigh Lake Road .....		1,028	—	1,028
Stanrock Mine Road .....	—		11,427	11,427

TOTAL EXPENDITURE ALLOCATED TO  
ACCESS AND INDUSTRIAL ROADS ....

\$ 10,687      \$ 67,354      \$ 78,041

UNINCORPORATED TOWNSHIP ROADS

Statute Labour Board .....	\$	146,144	\$ 380,848	\$ 526,992
Local Road Board .....		515,382	605,637	1,121,019
Settlers (Special) .....		3,774	31,529	35,303
Indian Reserves .....		—	42,475	42,475

TOTAL EXPENDITURE ALLOCATED TO  
UNINCORPORATED TOWNSHIP ROADS

\$ 665,300      \$ 1,060,489      \$ 1,725,789



LOCATION	CONSTRUCTION	MAINTENANCE	TOTAL
OTHER PROGRAMS:			
Belfield Expressway (Metro Toronto) .....	\$ 1,991,595	\$ —	\$ 1,991,595
Carleton Street Tunnel (St. Catharines) .....	68,972	—	68,972
Communication Road (Chatham) .....	—	5,195	5,195
E. C. Row Expressway (Windsor) .....	119,195	—	119,195
International Airport Road (Metro Toronto) ..	4,225	22,406	26,631
Macdonald-Cartier Bridge (Ottawa) .....	71,823	—	71,823
Main Street East Tunnel (Welland) .....	14,516	—	14,516
Perley Bridge (Hawkesbury) .....	4,484	4,511	8,995
Queensway (Ottawa) .....	683,672	243,701	927,373
Rainbow Bridge Plaza (Niagara Falls) .....	777,217	—	777,217
The Queensway (Metro Toronto) .....	CR. 5,250	—	CR. 5,250
Thorold Tunnel .....	8,641,325	—	8,641,325
Yonge Street (Metro Toronto) .....	16,575	—	16,575
Connecting Links .....	10,228,502	661,053	10,889,555
Development Roads .....	19,699,799	288,487	19,988,286
Ferries .....	29,930	833,296	863,226
Lands and Buildings .....	2,586,403	453,587	3,039,990
Miscellaneous Surveys .....	63,707	—	63,707
Sidewalks .....	95,467	—	95,467
Weigh Scales .....	103,970	18,048	122,018
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TOTAL EXPENDITURE ALLOCATED TO OTHER PROGRAMS .....	\$ 45,196,127	\$ 2,530,284	\$ 47,726,411
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HIGHWAY TOTALS .....	\$209,758,362	\$ 49,581,678	\$259,340,040
Sundry unallocated, District Office, Administra- tion, Engineering, Building, Inventory charges, etc. ....	3,840,421	10,583,272	14,423,693
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TOTAL EXPENDITURE .....	\$213,598,783	\$ 60,164,950	\$273,763,733
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[ ] Indicates that two highways share the same route; mileage is shown against bracketed highway.

**APPENDIX No. 8**  
**Chronological Summary of Road Expenditures and Provincial Subsidy**

YEAR	NUMBER OF COUNTIES	APPROVED EXPENDITURE	GOVERNMENT
1903-1910	17	\$ 2,690,530	\$ 896,843
1911	19	712,073	237,358
1912	20	898,631	299,544
1913	20	847,684	282,561
1914	20	785,522	261,841
1915	20	811,540	270,513
1916	21	955,447	327,664
1917	30	1,388,342	483,621
1918	36	2,226,900	815,440
1919	37	5,714,937	2,623,719
1920	37	7,956,864	3,626,418
1921	37	11,078,288	5,119,882
1922	37	9,162,492	4,258,340
1923	37	7,403,510	3,418,523
1924	37	6,861,452	3,214,322
1925	37	6,608,431	3,222,678
1926	37	5,838,445	2,913,661
1927	37	7,424,465	3,706,720
1928	37	8,784,420	4,360,223
1929	37	9,212,758	4,591,110
1930	37	8,929,424	4,463,527
1931	37	7,265,351	3,625,861
1932	37	4,214,411	2,106,457
1933	37	3,058,623	1,529,228
1934	37	3,391,769	1,695,291
1935	37	3,107,215	1,553,273
1936	37	3,438,189	1,718,945
1937	37	4,062,753	2,031,373
1938	37	4,686,333	2,342,972
1939	37	4,775,109	2,387,241
1940	37	4,496,702	2,247,977
1941	37	4,805,302	2,402,651
1942	37	3,221,505	1,610,753
1943	37	3,951,745	1,975,873
1944	37	4,675,029	2,365,507
1945	37	5,692,080	2,898,136
1946	37	7,392,946	3,769,755
1947	37	9,597,751	5,064,601
1948	37	11,345,809	6,176,598
1949	37	12,645,251	6,949,736
1950	37	12,863,430	6,923,704
1951	37	15,136,060	8,058,376
1952	37	17,373,345	9,276,798
1953	37	16,404,875	8,822,597
1954	37	17,221,063	9,393,936
1955	37	19,193,908	10,304,708
1956	37	22,632,300	12,042,792
1957	37	25,310,514	13,832,164
1958	37	27,044,966	14,603,895
1959	37	31,478,081	17,094,521
1960	37	32,090,732	17,613,395
1961	37	31,210,823	17,179,416
1962	37	35,033,598	19,025,880
1963	37	36,470,287	19,784,038
1964	37	37,118,003	20,361,773
1965	37	42,002,955	23,261,397
1966	37	45,404,138	24,663,011
1967	37	51,057,147	28,019,302

TOTALS TO DATE .....

\$727,162,253

\$384,108,439

## APPENDIX No. 9

## County Road Mileages and Expenditures

From Inception of County Road Systems to December 31st, 1967

## Provincial Subsidies on 1967 Expenditures Being Paid in the 1967-68 Fiscal Year

COUNTY	YEAR OF ESTABLISH- MENT OF SYSTEM	ROAD MILEAGES			TOTAL APPROVED EXPENDITURES	
		COUNTY ROADS	COUNTY SUB- URBAN	TOTAL	TO END OF 1967	TOTAL GOVERNMENT GRANT
Brant .....	1917	86.4	43.5	129.9	\$ 11,837,388	\$ 6,419,696
Bruce .....	1917	295.9	—	295.9	17,137,134	9,192,746
Carleton .....	1910	166.3	140.6	306.9	33,503,620	17,564,468
Dufferin .....	1918	146.2	—	146.2	7,821,294	4,054,889
Elgin .....	1917	278.4	19.0	297.4	17,363,142	9,268,599
Essex .....	1916	153.1	117.9	271.0	28,018,344	14,655,597
Frontenac .....	1907	127.3	22.5	149.8	9,895,323	5,167,889
Grey .....	1918	337.8	24.8	362.6	19,544,410	10,175,814
Haldimand .....	1912	190.5	—	190.5	15,961,660	8,574,688
Halton .....	1907	158.1	—	158.1	14,027,360	7,234,989
Hastings .....	1904	204.1	18.7	222.8	12,573,881	6,518,454
Huron .....	1917	341.2	—	341.2	20,034,455	10,881,471
Kent .....	1917	378.2	31.5	409.7	28,081,674	15,525,959
Lambton .....	1918	245.8	26.3	272.1	25,112,803	13,728,642
Lanark .....	1903	217.3	11.0	228.3	10,881,528	5,685,520
Leeds & Grenville .....	1910	312.3	29.7	342.0	15,469,049	7,829,993
Lennox & Addington .....	1906	154.2	—	154.2	9,522,588	4,935,947
Lincoln .....	1904	119.1	52.8	171.9	17,456,359	8,925,505
Middlesex .....	1906	320.7	67.6	388.3	35,153,318	19,283,327
Norfolk .....	1917	244.0	—	244.0	20,185,174	10,517,710
Northumberland & Durham .....	1918	304.2	6.8	311.0	19,790,785	10,467,273
Ontario .....	1918	236.5	38.6	275.1	20,861,129	11,135,314
Oxford .....	1904	212.7	15.6	228.3	19,165,909	10,134,663
Peel .....	1907	175.8	—	175.8	28,054,860	15,083,139
Perth .....	1907	179.7	29.1	208.8	12,165,116	6,349,395
Peterborough .....	1919	163.8	27.6	191.4	10,679,540	5,898,786
Prescott & Russell .....	1917	299.7	—	299.7	18,760,487	9,862,769
Prince Edw'd .....	1907	195.3	—	195.3	9,306,968	4,738,310
Renfrew .....	1918	216.0	—	216.0	14,762,338	7,764,392
Simcoe .....	1903	321.5	20.1	341.6	21,776,111	11,255,355
Stromont, Dundas, & Glengarry .....	1917	386.6	40.0	426.6	21,296,393	11,224,338
Victoria .....	1917	195.0	—	195.0	11,833,315	6,277,855
Waterloo .....	1908	103.0	117.0	220.0	22,735,365	12,343,055
Welland .....	1912	105.2	50.4	155.6	24,533,452	12,836,304
Wellington .....	1903	262.2	37.9	300.1	22,903,255	12,141,653
Wentworth .....	1903	.2	165.2	165.4	20,892,621	10,549,093
York .....	1911	11.2	195.2	206.4	58,064,105	29,904,842
TOTAL .....		7,845.5	1,349.4	9,194.9	\$727,162,253	\$384,108,439

## APPENDIX No. 10

**Incorporated Townships — Chronological Summary of Road Expenditure and  
Provincial Subsidy Including Improvement Districts and Indian Reserves**

YEAR	NO. OF TOWNSHIPS	APPROVED EXPENDITURE	SUBSIDY
1920 to 1934	172-352	\$ 58,408,281	\$ 18,749,941
1935	353	2,945,424	1,233,807
1936	357	2,988,617	1,251,633
1937	358	3,857,519	1,943,345
1938	574	4,826,905	2,553,838
1939	583	5,392,982	2,865,752
1940	584	4,505,296	2,411,065
1941	584	5,452,287	2,917,817
1942	583	3,698,301	1,978,368
1943	584	5,512,991	2,929,508
1944	585	6,263,800	3,400,704
1945	596	7,696,534	4,177,609
1946	602	9,366,655	5,131,432
1947	604	12,562,799	7,064,223
1948	606	13,688,529	7,763,290
1949	609	15,262,451	8,658,126
1950	610	15,852,838	8,944,246
1951	610	18,774,705	10,544,324
1952	614	21,261,357	11,966,206
1953	615	20,448,783	11,477,684
1954	617	23,346,393	13,185,562
1955	619	27,026,147	15,376,232
1956	623	30,080,387	16,908,429
1957	624	33,147,637	18,530,212
1958	627	35,683,958	19,867,541
1959	626	41,789,335	23,376,726
1960	625	45,098,685	25,150,102
1961	632	44,505,542	24,919,087
1962	633	46,022,547	26,082,619
1963	634	51,317,254	29,923,461
1964	633	53,234,003	31,228,752
1965	633	57,009,416	33,473,942
1966	635	66,814,210	39,371,538
1967	633	73,703,160	43,207,686
TOTALS		\$867,545,728	\$478,564,807

NOTE: 5 Boroughs, 566 Townships, 17 Improvement Districts and 45 Indian Reserves are represented in the above expenditures for 1967.



## APPENDIX No. 11

**Cities, Towns and Villages — Chronological Summary of Road Expenditures  
and Provincial Subsidy**

YEAR	NO. OF URBAN MUNICIPALITIES	APPROVED EXPENDITURE	SUBSIDY
1947	324	\$ 5,334,317	\$ 2,667,158
1948	327	5,614,301	2,807,150
1949	330	12,194,258	4,550,703
1950	331	12,834,507	4,823,922
1951	334	15,956,137	5,931,089
1952	333	15,898,103	5,946,052
1953	335	17,598,632	6,890,106
1954	336	18,223,848	7,021,798
1955	338	21,703,071	8,560,475
1956	339	24,456,353	9,612,157
1957	339	25,546,531	10,188,038
1958	340	30,231,141	11,723,535
1959	340	32,890,748	12,774,060
1960	341	36,899,762	14,506,073
1961	341	37,130,873	14,862,155
1962	345	40,193,137	15,903,508
1963	346	44,397,370	17,580,312
1964	346	51,665,358	20,535,895
1965	348	60,819,523	24,298,708
1966	346	71,813,234	28,350,639
1967	339	76,240,278	30,197,776
TOTALS .....		\$657,641,482	\$259,731,309

NOTE: 33 Cities, 6 Separated Towns, 145 Towns and 155 Villages are represented in the above expenditures for 1967.

## APPENDIX No. 12

## Summary of Expenditures on Urban Streets — 1967

Approved 1967 Expenditures by Cities, Towns and Villages under Part X  
of the Highway Improvement Act

MUNICIPAL ROAD DISTRICT No.	APPROVED EXPENDITURES — 1967				URBAN TOTAL (339)	GOVERNMENT SUBSIDY 33⅓ %, 50%, 80%
	CITIES (33) SEP. TOWNS (6)	TOWNS (145)	VILLAGES (155)			
1	\$ 3,864,267	\$ 936,370	\$ 293,375		\$ 5,094,012	\$ 2,004,051
2	4,621,448	945,167	182,890		5,749,505	2,296,284
3	5,311,000	1,489,204	187,107		6,987,311	2,672,932
4	9,521,276	4,203,988	372,160		14,097,424	5,750,051
5	890,165	1,900,979	317,054		3,108,198	1,463,784
6	2,376,642	2,976,962	381,429		5,735,033	2,549,285
6 MTA	10,138,951	—	—		10,138,951	3,379,650
7	1,357,030	1,053,523	207,665		2,618,218	1,089,278
8	2,050,247	106,204	188,432		2,344,883	837,583
9	9,070,631	1,430,495	410,445		10,911,571	3,962,880
10	—	—	86,445		86,445	44,729
11	—	319,802	374,153		374,153	189,232
13	450,608	250,799	54,351		723,363	287,607
14	—	737,541	21,956		741,444	410,905
16	—	594,032	3,903		594,032	300,024
17	1,912,168	660,020	—		2,572,188	1,052,352
18	1,816,583	41,403	8,382		1,866,368	938,382
19	1,697,974	29,494	—		1,727,468	580,671
20	—	769,711	—		769,711	388,096
TOTALS	\$55,078,990	\$18,445,694	\$2,715,594		\$76,240,278	\$30,197,776

## APPENDIX

Summary of County  
(Government Subsidies paid)

	ROADS		BRIDGES AND CULVERTS	
	CONSTRUCTION	MAINTENANCE	CONSTRUCTION	MAINTENANCE
Brant .....	\$ 476,653	\$ 228,287	\$ 353,379	\$ 5,365
Bruce .....	529,551	252,684	124,307	7,422
Carleton .....	598,413	227,132	180,974	19,587
Carleton (Ottawa Sub) .....	638,130	271,674	193,037	7,860
Dufferin .....	172,353	166,663	49,437	2,048
Elgin .....	595,129	302,047	233,041	18,032
Essex .....	787,268	312,506	257,899	12,927
Frontenac .....	637,467	155,798	43,877	1,188
Grey .....	673,621	365,186	145,343	9,878
Haldimand .....	628,749	47,692	35,393	78
Halton .....	675,859	236,023	147,705	1,737
Hastings .....	261,373	242,229	293,319	8,589
Huron .....	595,007	423,587	156,486	10,065
Kent .....	747,024	445,229	224,127	18,401
Lambton .....	1,255,029	373,175	191,637	2,054
Lanark .....	266,049	229,075	124,050	5,302
Leeds & Grenville .....	577,430	260,814	82,545	4,648
Lennox & Addington .....	147,815	154,272	16,838	2,272
Lincoln .....	706,971	249,008	66,692	8,195
Middlesex .....	1,174,126	432,799	663,500	12,933
Norfolk .....	901,109	318,940	210,741	23,330
Northumberland & Durham ..	965,718	302,590	283,147	5,510
Ontario .....	1,305,509	316,105	204,893	20,766
Oxford .....	632,782	345,791	133,095	9,742
Peel .....	1,809,797	332,002	502,518	9,647
Perth .....	382,353	193,582	93,727	3,378
Peterborough .....	414,143	200,185	358,392	1,398
Prescott & Russell .....	455,775	250,917	108,539	12,158
Prince Edward .....	203,288	176,243	90,946	2,126
Renfrew .....	388,445	151,257	124,318	12,575
Simcoe .....	837,902	422,934	267,125	3,223
Stormont, Dundas & Glengarry .....	548,176	331,025	359,793	31,535
Victoria .....	229,819	357,997	155,082	6,454
Waterloo .....	783,621	297,750	463,314	49,278
Welland .....	981,794	309,719	666,999	8,864
Wellington .....	535,732	394,705	97,255	11,568
Wentworth .....	978,000	293,507	33,023	9,714
York .....	3,292,802	511,120	181,088	5,001
TOTAL .....	\$27,790,782	\$10,882,249	\$7,917,581	\$384,848

## METROPOLITAN TORONTO

## Summary of Metropolitan

Roads (50%) .....	\$30,852,530	\$ 4,692,535	\$ 500,000	\$291,878
Subway (33⅓ %) .....	5,900,072	—	—	—

## No. 13

Road Expenditures  
in 1967-1968 Fiscal Year)

WINTER CONTROL MAINTENANCE	APPROVED EXPENDITURE			GOVERNMENT SUBSIDY 50% AND 80%
	CONSTRUCTION	MAINTENANCE	TOTAL	
\$ 34,402	\$ 830,032	\$ 268,054	\$ 1,098,086	\$ 656,666
150,903	653,858	411,009	1,064,867	571,952
56,606	779,387	303,325	1,082,712	601,524
126,726	831,167	406,260	1,237,427	678,983
57,732	221,790	226,443	448,233	239,562
90,454	828,170	410,533	1,238,703	694,674
50,097	1,045,167	375,530	1,420,697	791,596
66,102	681,344	223,088	904,432	465,736
242,572	818,964	617,636	1,436,600	764,866
12,794	664,142	60,564	724,706	372,994
104,091	823,564	341,851	1,165,415	627,540
69,710	554,692	320,528	875,220	528,183
135,820	751,493	569,472	1,320,965	710,448
41,131	971,151	504,761	1,475,912	810,714
45,081	1,446,666	420,310	1,866,976	991,595
98,083	390,099	332,460	722,559	400,086
81,646	659,975	347,108	1,007,083	529,699
48,211	164,653	204,755	369,408	190,437
79,646	773,663	336,849	1,110,512	577,722
115,386	1,837,626	561,118	2,398,744	1,402,302
62,582	1,111,850	404,852	1,516,702	828,572
171,421	1,248,865	479,521	1,728,386	950,790
207,265	1,510,402	544,136	2,054,538	1,094,967
93,933	765,877	449,466	1,215,343	650,523
160,764	2,312,315	502,413	2,814,728	1,561,014
50,771	476,080	247,731	723,811	391,037
67,231	772,535	268,814	1,041,349	628,612
84,731	564,314	347,806	912,120	492,269
46,949	294,234	225,318	519,552	287,697
64,868	512,763	228,700	741,463	411,799
216,331	1,105,027	642,488	1,747,515	954,861
100,971	907,969	463,531	1,371,500	803,148
122,680	384,901	487,131	872,032	484,477
143,902	1,246,935	490,930	1,737,865	1,022,710
94,971	1,648,793	413,554	2,062,347	1,233,932
160,043	632,987	566,316	1,199,303	632,299
141,956	1,011,023	445,177	1,456,200	740,921
383,125	3,473,890	899,246	4,373,136	2,242,395
\$4,081,687	\$35,708,363	\$15,348,784	\$51,057,147	\$28,019,302

## Road Expenditures — 1967

\$2,815,264	\$31,352,530	\$ 7,799,677	\$39,152,207	\$19,576,103
—	5,900,072	—	5,900,072	1,966,691



## APPENDIX No. 14

## Mileage of Urban Road Surfaces at the end of 1967

## Roads Under Local Authority

COUNTIES	LEGALLY OPEN	EARTH GRADED AND DRAINED	GRAVEL OR STONE	LIGHT BITUMI- NOUS	ASPHALT CON- CRETE	CEMENT CON- CRETE	OTHER	TOTAL
Brant .....	—	—	40.5	76.5	65.2	20.1	—	202.3
Bruce .....	9.3	8.9	48.2	56.5	28.8	—	—	151.7
Carleton .....	3.6	12.8	29.8	161.4	348.5	7.5	—	563.6
Dufferin .....	1.2	1.2	11.0	0.5	21.3	1.7	—	36.9
Elgin .....	13.5	1.2	22.1	52.2	40.2	1.1	1.1	131.4
Essex .....	13.3	24.4	88.8	91.8	192.9	294.0	3.4	708.6
Frontenac .....	0.3	0.8	—	16.4	73.9	0.3	—	91.7
Grey .....	0.5	27.3	34.7	71.3	27.6	2.3	—	163.7
Haldimand .....	14.5	3.7	23.5	22.4	18.5	—	—	82.6
Halton .....	30.6	5.5	190.2	241.5	159.5	7.9	—	635.2
Hastings .....	0.5	4.1	21.5	70.3	32.2	0.5	—	129.1
Huron .....	2.7	0.9	51.5	38.2	29.5	—	—	122.8
Kent .....	6.6	6.9	55.3	16.9	139.1	4.4	—	229.2
Lambton .....	7.7	2.6	86.9	59.2	81.8	8.0	—	246.2
Lanark .....	26.3	0.3	28.9	32.3	29.9	0.7	—	118.4
Leeds & Grenville .....	4.5	2.2	20.6	35.5	61.6	5.4	—	129.8
Lennox & Addington .....	0.2	—	3.6	13.8	5.8	—	—	23.4
Lincoln .....	2.4	7.9	28.7	213.1	91.6	56.2	—	399.9
Middlesex .....	13.7	2.0	102.3	223.8	180.8	1.7	—	524.3
Norfolk .....	4.8	2.4	17.2	38.3	21.8	0.1	—	84.6
Northumberland & Durham .....	5.3	10.3	44.9	71.7	69.0	4.4	—	205.6
Ontario .....	20.5	0.2	51.5	103.3	153.1	—	—	328.6
Oxford .....	8.7	1.1	41.7	69.8	40.2	2.7	0.4	164.6
Peel .....	0.5	1.3	19.5	25.1	67.2	—	—	113.6
Perth .....	11.6	1.3	53.8	52.3	48.1	0.7	—	167.8
Peterborough .....	9.3	0.1	31.1	79.2	70.4	1.0	—	191.1
Prescott & Russell .....	7.5	2.3	10.4	15.6	28.4	—	—	64.2
Prince Edward .....	—	0.1	1.0	7.2	14.1	0.9	—	23.3
Renfrew .....	1.6	4.7	47.1	46.5	68.8	—	—	168.7
Simcoe .....	19.0	17.8	90.1	133.1	126.7	6.7	—	393.4
Stormont, Dundas & Glengarry .....	2.1	—	32.0	44.4	20.9	50.0	17.9	167.3
Victoria .....	15.5	2.3	46.5	3.7	25.9	—	—	93.9
Waterloo .....	24.9	5.1	36.9	209.0	202.3	41.0	—	519.2
Welland .....	35.0	5.8	60.4	248.6	162.2	5.3	—	517.6
Wellington .....	12.2	4.4	59.1	101.6	107.7	2.8	—	287.8
Wentworth .....	6.5	0.2	14.9	148.9	390.5	1.6	—	562.6
York .....	0.7	2.9	16.1	51.4	69.4	—	—	140.5
TOTAL COUNTIES .....	337.1	175.0	1,562.3	2,943.3	3,315.7	529.0	22.8	8,885.2
Metro Toronto Area .....	3.0	—	4.1	6.5	497.3	5.4	2.6	518.9

## DISTRICTS

Algoma .....	111.5	4.9	151.3	13.5	102.7	0.3	—	384.2
Cochrane .....	36.3	7.7	68.1	23.9	50.1	—	—	186.1
Haliburton .....	—	—	—	—	—	—	—	—
Kenora .....	—	—	54.2	10.3	39.0	0.1	—	103.6
Manitoulin .....	3.3	2.8	11.8	1.0	0.5	—	—	19.4
Muskoka .....	23.9	0.4	38.4	25.5	17.9	—	—	106.1
Nipissing .....	10.1	1.6	111.2	16.2	62.3	—	—	201.4
Parry Sound .....	29.2	0.2	33.9	2.3	16.4	—	—	82.0
Rainy River .....	—	1.1	36.1	11.0	15.2	0.2	0.4	64.0
Sudbury .....	14.1	4.4	63.1	79.1	137.4	0.4	—	298.5
Temiskaming .....	—	—	35.0	2.2	24.6	—	—	61.8
Thunder Bay .....	—	—	89.6	44.8	125.4	0.2	—	260.0
<b>TOTAL DISTRICTS ....</b>	<b>228.4</b>	<b>23.1</b>	<b>692.7</b>	<b>229.8</b>	<b>591.5</b>	<b>1.2</b>	<b>0.4</b>	<b>1,767.1</b>
<b>GRAND TOTAL .....</b>	<b>568.5</b>	<b>198.1</b>	<b>2,259.1</b>	<b>3,179.6</b>	<b>4,404.5</b>	<b>535.6</b>	<b>25.8</b>	<b>11,171.2</b>

## APPENDIX

## Mileage of Rural Road Surfaces

COUNTY	COUNTY ROADS						
	LEGALLY OPEN	EARTH GRADED AND DRAINED	GRAVEL OR STONE	LIGHT BITUMI- NOUS SURFACE	ASPHALT CON- CRETE	CEMENT CON- CRETE	OTHER
Brant .....	—	—	21.1	102.2	6.6	—	—
Bruce .....	—	—	86.9	106.7	102.3	—	—
Carleton .....	—	—	33.7	84.7	188.5	—	—
Dufferin .....	—	—	95.0	2.7	48.5	—	—
Elgin .....	—	0.6	102.4	172.3	22.1	—	—
Essex .....	—	—	105.1	58.5	91.6	2.7	13.1
Frontenac .....	—	—	25.6	84.4	39.8	—	—
Grey .....	—	—	235.7	102.1	24.2	0.6	—
Haldimand .....	0.3	3.2	12.3	168.3	6.4	—	—
Halton .....	—	—	34.1	73.8	50.2	—	—
Hastings .....	—	—	133.9	76.0	10.8	2.1	—
Huron .....	—	—	164.9	84.2	92.1	—	—
Kent .....	—	0.2	30.4	17.2	350.8	6.6	4.5
Lambton .....	—	—	91.5	53.5	106.7	0.1	20.3
Lanark .....	—	—	112.8	115.5	—	—	—
Leeds & Grenville .....	—	—	130.0	152.9	59.1	—	—
Lennox & Addington .....	—	—	15.3	95.5	43.4	—	—
Lincoln .....	0.9	—	11.5	125.8	33.7	—	—
Middlesex .....	0.3	—	67.5	121.6	186.0	12.9	—
Norfolk .....	1.4	3.4	28.3	206.5	2.8	1.6	—
Northumberland & Durham .....	—	—	48.9	155.2	106.9	—	—
Ontario .....	—	—	47.5	70.1	157.5	—	—
Oxford .....	—	—	56.6	100.8	59.3	11.6	—
Peel .....	—	—	14.0	70.4	91.4	—	—
Perth .....	—	—	47.1	76.9	84.8	—	—
Peterborough .....	—	—	96.1	37.6	60.2	—	—
Prescott & Russell .....	—	—	92.9	124.7	82.1	—	—
Prince Edward .....	—	—	40.5	114.9	39.9	—	—
Renfrew .....	—	—	19.2	13.8	183.0	—	—
Simcoe .....	—	—	128.4	69.7	143.5	—	—
Stormont, Dundas, Glengarry .....	—	—	102.3	264.7	58.3	0.6	0.7
Victoria .....	—	—	103.2	49.8	42.0	—	—
Waterloo .....	—	—	17.0	112.6	84.0	6.4	—
Welland .....	2.5	—	8.7	114.1	30.3	—	—
Wellington .....	—	—	142.9	70.4	86.8	—	—
Wentworth .....	—	—	—	163.6	1.8	—	—
York .....	—	—	12.5	9.6	184.3	—	—
TOTAL COUNTIES .....	5.4	7.4	2,515.8	3,622.3	2,961.7	45.2	38.6

## Metropolitan

Metropolitan Toronto Area ..	2.1	—	1.3	5.5	353.4	1.8	—
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## No. 15

at the end of 1967

## INCORPORATED — TOWNSHIP ROADS

TOTAL	LEGALLY OPEN	EARTH GRADED AND DRAINED	GRAVEL OR STONE	LIGHT BITUMI- NOUS SURFACE	ASPHALT CON- CRETE	CEMENT CON- CRETE	OTHER	TOTAL
129.9	9.2	5.8	443.8	75.6	10.7	—	—	545.1
295.9	75.8	78.8	1,629.6	60.3	11.1	—	—	1,855.6
306.9	89.5	22.1	745.6	121.0	98.8	—	1.8	1,078.8
146.2	50.5	38.2	734.6	8.0	0.8	—	—	832.1
297.4	26.7	40.0	786.7	10.9	2.8	0.5	—	867.6
271.0	8.6	17.1	732.6	115.5	22.3	2.2	7.3	905.6
149.8	102.4	61.0	931.4	59.4	22.9	—	—	1,177.1
362.6	141.8	99.4	1,901.1	35.9	7.9	0.6	—	2,186.7
190.5	22.9	35.5	449.5	79.7	12.7	—	—	600.3
158.1	16.4	2.4	218.0	1.9	—	—	—	238.7
222.8	198.6	111.5	1,445.0	43.6	12.6	—	—	1,811.3
341.2	52.4	30.0	1,541.0	16.1	14.4	1.1	—	1,655.0
409.7	5.5	17.9	1,154.0	2.0	25.8	1.3	7.5	1,214.0
272.1	7.4	119.1	1,219.4	56.8	15.8	—	17.2	1,435.7
228.3	101.3	39.7	827.9	47.7	20.4	—	—	1,037.0
342.0	206.3	73.2	960.8	79.8	42.6	0.9	—	1,363.6
154.2	103.9	80.8	563.8	40.8	4.9	—	—	794.2
171.9	88.3	68.7	384.0	119.7	1.4	1.3	—	663.4
388.3	60.5	23.2	1,561.7	25.5	18.9	0.2	—	1,690.0
244.0	32.4	78.8	461.9	258.4	68.3	—	—	899.8
311.0	466.1	284.7	1,676.4	173.1	33.1	0.4	—	2,633.8
275.1	240.2	27.3	958.6	55.9	82.8	—	—	1,364.8
228.3	11.8	6.2	951.5	16.7	47.4	—	2.3	1,035.9
175.8	29.2	22.1	469.7	150.5	197.7	—	—	869.2
208.8	16.3	10.2	994.9	3.6	0.7	—	—	1,025.7
193.9	56.1	46.7	858.4	23.8	4.8	—	—	989.8
299.7	87.3	205.9	746.7	19.0	16.3	—	—	1,075.2
195.3	25.3	12.0	321.2	18.4	5.0	1.2	—	383.1
216.0	130.0	120.2	1,409.4	6.1	44.9	—	—	1,710.6
341.6	148.6	40.7	1,939.0	201.0	46.5	—	—	2,375.8
426.6	75.8	83.9	1,148.6	48.6	60.0	—	—	1,416.9
195.0	49.4	48.1	909.6	3.7	10.8	—	—	1,021.6
220.0	19.1	2.9	481.4	78.1	6.8	1.4	0.3	590.0
155.6	152.1	162.6	394.3	208.9	15.8	0.4	—	934.1
300.1	49.9	66.9	1,032.9	90.4	12.9	0.1	—	1,253.1
165.4	34.7	17.9	430.1	81.0	4.4	—	—	568.1
206.4	63.1	3.6	735.9	50.0	138.4	—	—	991.0
9,197.4	3,055.4	2,205.1	34,151.0	2,487.4	1,143.4	11.6	36.4	43,090.3
<b>Roads</b>								
364.1	53.3	49.2	62.6	452.4	1,284.6	4.5	—	1,906.6



DISTRICTS							
Algoma .....	—	—	—	—	—	—	—
Cochrane .....	—	—	—	—	—	—	—
Haliburton .....	—	—	—	—	—	—	—
Kenora .....	—	—	—	—	—	—	—
Manitoulin .....	—	—	—	—	—	—	—
Muskoka .....	—	—	—	—	—	—	—
Nipissing .....	—	—	—	—	—	—	—
Parry Sound .....	—	—	—	—	—	—	—
Rainy River .....	—	—	—	—	—	—	—
Sudbury .....	—	—	—	—	—	—	—
Timiskaming .....	—	—	—	—	—	—	—
Thunder Bay .....	—	—	—	—	—	—	—
TOTAL DISTRICTS .....	—	—	—	—	—	—	—
Unorganized Twps. ....	—	—	—	—	—	—	—
GRAND TOTALS .....	7.4	7.4	2,517.1	3,628.8	3,315.1	47.0	38.6

## APPENDIX No. 16

Summary of King's Highway Mileage by Highway Districts  
As of March 31, 1968

DISTRICT	CONCRETE	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	TOTAL
Chatham .....	91.2	499.3	19.8	—	610.3
London .....	52.6	538.5	17.2	—	608.3
Stratford .....	7.1	632.1	1.0	4.8	645.0
Hamilton .....	89.6	532.1	33.5	4.7	659.9
Owen Sound .....	15.6	548.8	20.7	26.4	611.5
Toronto .....	37.0	434.3	45.9	3.4	520.6
Port Hope .....	10.0	482.4	55.5	6.3	554.2
Kingston .....	63.8	548.5	105.7	5.1	723.1
Ottawa .....	59.5	627.8	57.5	4.6	749.4
Bancroft .....	—	118.0	208.7	46.4	373.1
Huntsville .....	—	287.4	100.2	11.2	398.8
North Bay .....	—	315.4	69.2	40.1	424.7
New Liskeard .....	—	269.9	155.0	84.7	509.6
Cochrane .....	—	297.9	5.3	15.5	318.7
Sudbury .....	—	297.3	12.9	90.8	401.0
Sault Ste. Marie .....	—	371.1	82.6	154.6	608.3
Fort William .....	—	605.2	20.5	18.1	643.8
Kenora .....	—	454.0	61.5	88.2	603.7
TOTAL .....	426.4	7,860.0	1,072.7	604.9	9,964.0

APPENDIX No. 15 (Continued)

244.7	47.7	894.0	14.8	121.3	0.3	0.1	1,322.9
622.0	40.0	483.3	17.7	9.3	—	6.5	1,178.8
41.1	26.9	477.3	72.5	1.7	—	—	619.5
10.4	1.9	155.0	4.3	0.3	—	—	171.9
14.6	35.7	444.4	—	1.3	—	—	496.0
203.9	72.7	681.6	159.2	1.3	—	—	1,118.7
35.2	7.0	408.9	19.8	6.0	—	—	476.9
134.3	48.1	1,023.3	32.3	20.3	—	—	1,258.3
24.2	47.2	534.9	0.6	—	—	—	606.9
30.3	90.3	603.8	9.1	31.3	—	—	764.8
33.5	—	583.4	34.6	15.5	—	—	667.0
60.8	13.6	604.5	69.8	47.7	—	—	796.4
1,455.0	431.1	6,894.4	434.7	256.0	0.3	6.6	9,478.1
223.4	738.4	3,997.4	2.2	3.1	—	—	4,964.5
9,561.5	4,787.1	3,423.8	45,105.4	3,376.7	2,687.1	16.4	59,439.5

APPENDIX No. 17

Summary of Secondary Highway Mileage by Highway Districts  
As of March 31, 1968

DISTRICT	CONCRETE	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	TOTAL
Owen Sound .....	—	0.2	0.1	8.9	9.2
Port Hope .....	—	6.0	50.7	27.4	84.1
Kingston .....	—	8.7	14.1	0.5	23.3
Ottawa .....	—	—	37.6	14.3	51.9
Bancroft .....	—	14.2	127.4	140.7	282.3
Huntsville .....	—	11.7	173.1	76.0	260.8
North Bay .....	—	8.0	105.0	104.2	217.2
New Liskeard .....	—	40.6	127.6	211.9	380.1
Cochrane .....	—	4.6	—	158.8	163.4
Sudbury .....	—	33.0	68.4	300.0	401.4
Sault Ste. Marie .....	—	26.9	41.1	184.7	252.7
Fort William .....	—	14.1	36.5	442.2	492.8
Kenora .....	—	8.6	8.2	341.5	358.3
TOTAL .....	—	176.6	789.8	2,011.1	2,977.5

APPENDIX No. 18

Summary of Tertiary Road Mileage by Highway Districts  
As of March 31, 1968

DISTRICT	CONCRETE	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	TOTAL
North Bay .....	—	—	—	35.0	35.0
Cochrane .....	—	—	—	44.0	44.0
Sudbury .....	—	4.2	—	—	4.2
Fort William .....	—	—	—	116.8	116.8
Kenora .....	—	—	—	12.8	12.8
TOTAL .....	—	4.2	—	208.6	212.8

## APPENDIX No. 19

## Types of Surface on The King's Highways

As of March 31, 1968

COUNTY OR DISTRICT	CONCRETE	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	TOTAL
Algoma .....	—	344.1	82.6	84.8	511.5
Brant .....	23.9	65.7	6.3	4.7	100.6
Bruce .....	4.8	120.1	20.7	16.9	162.5
Carleton .....	14.1	135.2	—	2.6	151.9
Cochrane .....	—	333.5	64.8	17.1	415.4
Dufferin .....	0.8	77.1	1.0	—	78.9
Elgin .....	36.0	108.2	—	—	144.2
Essex .....	14.9	171.8	19.8	—	206.5
Frontenac .....	5.0	118.3	46.8	7.0	177.1
Grey .....	4.7	149.1	—	9.5	163.3
Haldimand .....	—	71.7	2.3	—	74.0
Haliburton .....	—	57.3	58.5	—	115.8
Halton .....	16.7	89.9	—	—	106.6
Hastings .....	4.8	175.5	77.7	4.0	262.0
Huron .....	—	204.4	—	—	204.4
Kenora .....	—	373.0	42.0	79.2	494.2
Kent .....	47.9	167.7	—	—	215.6
Lambton .....	28.4	159.8	—	—	188.2
Lanark .....	—	114.1	9.4	—	123.5
Leeds and Grenville .....	28.8	209.0	15.8	—	253.6
Lennox and Addington .....	26.5	81.5	43.3	—	151.3
Lincoln .....	10.6	71.3	—	—	81.9
Manitoulin .....	—	19.1	—	36.7	55.8
Middlesex .....	16.4	206.3	—	—	222.7
Muskoka .....	—	153.4	37.4	1.7	192.5
Nipissing .....	—	222.9	89.1	44.5	356.5
Norfolk .....	—	78.7	17.2	—	95.9
Northumberland and Durham .....	—	247.0	12.5	6.3	265.8
Ontario .....	—	156.0	9.3	—	165.3
Oxford .....	4.3	140.6	—	—	144.9
Parry Sound .....	—	142.2	40.1	7.9	190.2
Peel .....	11.1	98.6	9.1	—	118.8
Perth .....	—	129.4	—	—	129.4
Peterborough .....	6.1	79.9	27.3	12.8	126.1
Prescott and Russell .....	—	103.8	—	2.0	105.8
Prince Edward .....	3.9	50.0	4.8	—	58.7
Rainy River .....	—	185.0	17.5	9.0	211.5
Renfrew .....	—	220.1	72.3	22.9	315.3
Simcoe .....	6.9	298.1	6.4	—	311.4
Stormont, Dundas & Glengarry ..	43.0	162.0	19.1	—	224.1
Sudbury .....	—	252.3	25.5	176.1	453.9
Thunder Bay .....	—	614.3	20.5	18.1	652.9
Timiskaming .....	—	169.6	91.3	32.9	293.8
Victoria .....	—	115.7	35.9	—	151.6
Waterloo .....	10.0	74.8	—	—	84.8
Welland .....	26.4	84.2	0.6	—	111.2
Wellington .....	10.4	163.2	—	4.8	178.4
Wentworth .....	2.1	124.1	24.3	—	150.5
York .....	17.9	170.4	21.5	3.4	213.2
<b>TOTAL .....</b>	<b>426.4</b>	<b>7,860.0</b>	<b>1,072.7</b>	<b>604.9</b>	<b>9,964.0</b>

**APPENDIX No. 20**  
**Types of Surfaces on Secondary Highways**  
**As of March 31, 1968**

COUNTY OR DISTRICT (DISTRICT)	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	EARTH	TOTAL
Algoma .....	21.3	41.9	265.8	—	329.0
Cochrane .....	33.2	57.5	102.8	—	193.5
Frontenac .....	—	20.3	20.2	—	40.5
Haliburton .....	6.1	49.8	39.3	—	95.2
Hastings .....	3.1	21.6	15.7	—	40.4
Kenora .....	8.8	8.2	167.5	—	184.5
Lanark .....	—	14.0	—	—	14.0
Lennox-Addington .....	6.2	6.5	—	—	12.7
Manitoulin .....	—	39.9	128.3	—	168.2
Muskoka .....	11.5	78.0	14.1	—	103.6
Nipissing .....	4.6	34.5	47.8	—	86.9
Parry Sound .....	1.4	147.3	99.3	—	248.0
Peterborough .....	0.3	36.3	35.8	—	72.4
Rainy River .....	3.1	10.5	214.3	—	227.9
Renfrew .....	8.8	57.3	56.7	—	122.8
Sudbury .....	34.8	35.9	185.7	—	256.4
Thunder Bay .....	16.4	26.0	457.2	2.4	502.0
Timiskaming .....	11.9	70.3	132.0	—	214.2
Victoria .....	5.1	34.0	26.2	—	65.3
<b>TOTAL .....</b>	<b>176.6</b>	<b>789.8</b>	<b>2,008.7</b>	<b>2.4</b>	<b>2,977.5</b>

**APPENDIX No. 21**  
**Types of Surface on Tertiary Roads**  
**as of March 31, 1968**

DISTRICT	HIGH CLASS BITUMINOUS	LOW CLASS BITUMINOUS	GRAVEL	EARTH	TOTAL
Cochrane .....	—	—	44.0	—	44.0
Kenora .....	—	—	12.8	—	12.8
Nipissing .....	—	—	35.0	—	35.0
Sudbury .....	4.2	—	—	—	4.2
Thunder Bay .....	—	—	116.8	—	116.8
<b>TOTAL .....</b>	<b>4.2</b>	<b>—</b>	<b>208.6</b>	<b>—</b>	<b>212.8</b>

**APPENDIX No. 22**  
**Road Mileages in Ontario**  
**as of March 31, 1968**

	HIGH CLASS CONCRETE	LOW CLASS BITUMINOUS	GRAVEL	EARTH	TOTAL
Kings Highways .....	426.4	7,860.0	1,072.7	604.9	9,964.0
Secondary Highways .....	—	176.6	789.8	2,008.7	2,977.5
Tertiary Roads .....	—	4.2	—	208.6	212.8
<b>TOTAL .....</b>	<b>426.4</b>	<b>8,040.8</b>	<b>1,862.5</b>	<b>2,822.2</b>	<b>13,154.3</b>



## APPENDIX No. 23

## Schedule of Controlled Access Highways

April 1st, 1967 to March 31st, 1968

HIGHWAY	NAME OR LOCATION	DESIGNATED BY ONTARIO REGULATION	MILEAGE
		NUMBER	
3	Dunnville Diversion .....	303/67	9.05
3	Dunnville Diversion .....	382/67	15.16
7	St. Mary's By-Pass .....	227/67	6.06
7	Kitchener to New Hamburg (Twp. of Wilmot) ....	343/67	4.50
11	Gravenhurst By-Pass .....	36/68	3.80
16	Spencerville By-Pass (Twp. of Edwardsburg) .....	343/67	3.69
40	Wallaceburg to Sarnia .....	303/67	8.40
54	Onondaga to Cainsville .....	343/67	1.42
56	Dunnville Diversion .....	382/67	1.00
403	Chedoke Expressway (City of Hamilton) .....	21/68	3.20
416	Southwest Freeway (Ottawa) .....	154/67	1.70
417	Twps. of Gloucester and Cumberland .....	303/67	9.50
Belfield Expressway	Twp. of Chinguacousy .....	97/68	1.90
County Road No. 9	Twps. of March, Nepean and Goulbourn .....	303/67	2.60
Communication Road	Twp. of Harwich .....	27/68	4.50
TOTAL MILEAGE .....			76.48

## APPENDIX No. 24

## Schedule of Existing Roads Assumed as Portions of The King's Highway.

## Secondary Highway and Tertiary Road Systems

Fiscal Year Ending March 31, 1968

COUNTY OR DISTRICT	PLAN NO.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Carleton	P-1696-41	Goulbourn March and Nepean	June 1/67	County Road No. 9	2.600
	P-2684-66	Nepean	Feb. 20/68	7 & 15TC	0.360
	P-3409-29	Ottawa City	Apr. 3/67	Queensway	1.800
	P-3409-30	Ottawa City	Apr. 5/67	Queensway	1.400
	P-3409-31	Ottawa City	Apr. 3/67	Queensway	1.100
	P-3409-32	Ottawa City	Apr. 4/67	Queensway	0.520
	P-3409-33	Ottawa City	Apr. 3/67	Queensway	0.570
	P-3409-34	Ottawa City	Apr. 3/67	Queensway	0.890
	P-3409-35	Ottawa City	Apr. 4/67	Queensway	1.400
	P-3409-36	Ottawa City	Apr. 3/67	Queensway	2.080
Haldimand	P-2046-21	Village of Jarvis	Aug. 9/67	6	0.910
Kenora	P-8128-2	Unsurveyed Territory	Aug. 10/67	657	1.200
Kent	P-4072	Chatham	June 7/67	New 40 Communication	0.210
	P-4076	Harwich	Dec. 5/67	Road	4.500
Lambton	P-2311-86	City of Sarnia	July 17/67	402	0.024
	P-2311-87	City of Sarnia	July 17/67	402	0.019
	P-4073	Sombra	June 7/67	New 40	0.500
Middlesex	P-3053-156	Westminster	May 8/67	401	0.280
	P-3525-6	London, Biddulph and W. Nissouri	Apr. 13/67	7	1.360
	P-3525-7	W. Nissouri	Apr. 14/67	7	1.160
	P-3525-8	W. Nissouri	Apr. 13/67	7	1.700
	P-3525-9	W. Nissouri	Apr. 18/67	7	4.120
Ontario	P-5061-3	Thorah	Apr. 18/67	48B	0.140
Oxford	P-3525-9	E. Nissouri	(See Middlesex County)		
Parry Sound	P-7079-3	Humphrey	Feb. 12/68	632	0.630
Perth	P-3525-6	Blanshard	(See Middlesex County)		
	P-3525-7	Blanshard	(See Middlesex County)		
	P-3525-8	Blanshard	(See Middlesex County)		
	P-3525-9	Blanshard	(See Middlesex County)		
Simcoe	P-2079-57	City of Barrie	May 17/67	3	0.430
Stormont	P-6065	Roxborough and Cornwall	Apr. 3/67	138	11.000
Sudbury	P-7188	Foley et	May 2/67	Foley et Ent.	0.420
	P-7199	Noble	Dec. 18/67	560	0.440
Thunder Bay	P-2572-23	Neebing	Oct. 11/67	61	0.300
	P-8069-38	Neebing	Apr. 18/67	Lakehead Expy.	0.260
York	P-1960-198	Etobicoke	Aug. 11/67	QEW	0.027
	P-2083-215	Etobicoke	Apr. 21/67	27	0.380
	P-2083-226	Etobicoke	Sept. 13/67	27 & QEW	0.565

## APPENDIX No. 25

**Schedule of Designations and Re-Designations of Sections of the King's Highway,  
Secondary Highway and Tertiary Road Systems for the**

**Fiscal Year Ending March 31, 1968**

COUNTY OR DISTRICT	PLAN No.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Algoma	P-8071-7	28, Range 24	May 4/67	547	0.330
Brant	P-1786-42	S. Dumfries	Mar. 7/68	24	6.500
	P-1855-17	S. Dumfries	Mar. 7/68	5	3.780
	P-1997-80	Brantford	Nov. 16/67	2	2.500
	P-2519-30	Brantford	Mar. 7/68	24	2.250
	P-2675-27	Brantford	Nov. 16/67	53	4.200
	P-3275-25	Brantford and Onondaga	July 27/67	54	1.420
	P-5041-20	Brantford	Aug. 10/67	403	6.350
Bruce	*P-1828-25	Culross	Mar. 16/67	4	9.470
	P-1999-36	Carrick	May 11/67	9	11.300
	P-2024-6	Kinloss	Oct. 26/67	9	2.500
	P-2762-12	Huron	Oct. 5/67	86	11.200
	P-2898-17	Lindsay	Dec. 7/67	6	4.790
Carleton	P-1666-37	Fitzroy	Dec. 7/67	17	4.290
	P-1696-41	Goulbourne, March and Nepean	July 27/67	County Road No. 9	2.600
	P-1770-27	Huntley	Dec. 7/67	17	5.200
	P-1770-28	Huntley	Feb. 1/68	17	9.090
	P-6066	Gloucester	July 6/67	417	9.500
Cochrane	P-7129-12	Godfrey	Oct. 19/67	576	6.540
	P7173-12	Robb	July 27/67	576	5.610
	P-7174-3	Jamieson	Nov. 9/67	576	1.750
Dufferin	P-1962-43	Melancthon	Mar. 7/68	10	9.500
Frontenac	P-1876-29	Kennebec	Jan. 18/68	7TC	10.500
	P-2552-9	Oso	Aug. 30/67	509	0.430
Grenville	P-1825-22	Edwardsburgh	Aug. 3/67	16	3.690
Haldimand	P-1692-20	Canborough	May 18/67	3	4.850
	P-1700-24	Moulton	May 18/67	3	9.560
	P-1928-38	N. Cayuga	May 18/67	3	5.600
	P-2046-21	Village of Jarvis	Aug. 30/67	6	0.910
	P-2768-7	N. Cayuga	May 8/67	56	1.000
Halton	P-1939-177	Trafalgar	Dec. 7/67	QEW	0.050
Hastings	P-1874-19	Elzevir	May 4/67	7TC	9.500
	P-1949-41	Madoc	Feb. 8/68	7TC	0.380
Huron	P-2017-61	Goderich	Dec. 7/67	8	10.400
	P-2051-30	Usborne	Apr. 27/67	23	7.510
	P-2762-12	Ashfield	(See Bruce County)		
Kenora	P-2193-10	Redvers	June 1/67	105	1.750
	P-2194-16	Rugby	Feb. 8/68	605	2.700
	P-2388-12	Haycock and Kirkup	June 8/67	17TC	2.360
	P-2664-6	Docker	June 8/67	17TC	5.000
	P-2826-55	Unsurveyed Territory	May 18/67	105	8.220
	P-2826-56	Unsurveyed Territory	June 8/67	105	9.040
	P-2826-57	Unsurveyed Territory	June 8/67	105	6.520

COUNTY OR DISTRICT	PLAN NO.	TOWNSHIP	EFFECTIVE DATE	HWY. NO.	MILES
	P-2835-8	Langton	May 11/67	105	2.390
	P-2844-16	Wabigoon	June 8/67	105	6.150
	P-2856-58	Unsurveyed Territory	July 6/67	105	10.030
	P-2856-59	Unsurveyed Territory	Aug. 3/67	105	12.640
	P-2859-3	Dome	July 6/67	105	0.450
	P-2892-4	Buller	Aug. 3/67	105	5.660
	P-2893-11	Heyson and Byshe	Feb. 8/68	105	7.300
	P-2987-7	Heyson	July 6/67	125	1.950
	P-3001-16	Dome and Balmer	Feb. 8/68	125	6.510
	P-3157-10	Kirkup	June 8/67	17TC	5.360
	P-3225-6	Jaffray	July 6/67	128	2.770
	P-3384-9	Connell	Apr. 20/67	599	1.960
	P-3505-2	Town of Dryden	July 6/67	601	1.000
	P-3506-9	Eton	Feb. 8/68	605	4.980
	P-3511-11	Wainright and Zealand	Feb. 8/68	601	6.000
	P-3522-19	Zealand	Feb. 22/68	601	7.520
	P-3561-4	Desmond	June 8/67	17TC	3.380
	P-8067-3	Heyson and Byshe	Feb. 8/68	618	5.310
	P-8082-1	Baird	Feb. 22/68	618	1.960
	P-8086-2	Connell	June 1/67	646	4.750
	P-8089-7	Langton	Feb. 22/68	647	3.340
	P-8098-10	Unsurveyed Territory	June 1/67	599	6.180
	P-8098-11	Unsurveyed Territory	June 1/67	599	6.270
	P-8098-12	Unsurveyed Territory	June 8/67	599	6.570
Kent	P-1619-31	Camden and Chatham	Sept. 14/67	21	13.200
	P-4072-1	Chatham	June 22/67	New 40	2.500
	P-4076	Harwich	Dec. 14/67	Communication Road	4.500
Lambton	P-4073-1	Sombra	June 22/67	New 40	5.900
Lennox and Addington	P-1873-39	Kaladar	Dec. 7/67	7TC	10.610
Middlesex	P-3525-6	London, Biddulph, Blanshard and W. Nissouri	May 11/67	St. Mary's By-Pass (7)	1.360
	P-3525-8	W. Nissouri	May 11/67	7	1.700
	P-3525-10	W. Nissouri	Apr. 27/67	St. Mary's By-Pass (7)	6.060
Muskoka	P-2626-67	Muskoka	Nov. 30/67	Grav. By-Pass	3.800
Nipissing	P-7125-7	Bonfield	Sept. 7/67	531	2.280
Ontario	P-5061-3	Thorah	May 11/67	48B	0.140
Oxford	P-2081-38	City of Woodstock	Jan. 4/68	2	0.670
	P-3525-10	E. Nissouri	(See Middlesex County)		
Parry Sound	P-7079-3	Humphrey	Mar. 7/68	632	0.630
Peel	P-1857-257	Toronto	July 27/67	QEW	0.200
	P-5083	Chinguacousy	Jan. 4/68	Belfield Expy.	1.900
Perth	P-2051-30	Blanshard	(See Huron County)		
	P-2052-45	Ellice and Mornington	Feb. 1/68	19	12.930
	P-3525-7	Blanshard and Nissouri	May 11/67	1	1.160
	P-3525-8	Blanshard	(See Middlesex County)		
	P-3525-10	Blanshard and Downie	(See Middlesex County)		
Rainy River	P-2602-19	Big Grassy Indian Reserve 35G	Feb. 22/68	621	11.100
Renfrew	P-3303-15	Richards	Jan. 18/68	62	3.000
	P-6013-8	Hagarty	Jan. 18/68	62	8.500
Russell	P-6066	Cumberland	(See Carleton County)		



COUNTY OR DISTRICT	PLAN No.	TOWNSHIP	EFFECTIVE DATE	Hwy. No.	MILES
Simcoe	P-2079-58	Vespra	Nov. 30/67	27	7.800
Stormont	P-6065	Roxborough and Cornwall	Apr. 27/67	138	11.000
Sudbury	*P-2925-24	Whitefish River Indian Reserve	Mar. 30/67	68	3.000
	P-7103-3	Jack	Jan. 11/68	560	0.510
	P-7188	Foleyet	June 1/67	Foleyet	
	P-7199-1	Noble	Jan. 11/68	Entrance 560	0.420
Thunder Bay	P-2118-21	Neebing	Apr. 13/67	17TC	4.420
	P-2547-8	Eva	Apr. 13/67	580	3.400
	P-2564-27	Unsurveyed Territory	Apr. 13/67	17TC	5.500
	P-2581-50	McTavish	Apr. 20/67	17TC	7.160
	P-2581-51	McTavish	Apr. 20/67	17TC	6.600
	P-2589-21	Oliver	Apr. 20/67	17TC	1.120
	P-2599-18	Conmee	Feb. 22/68	17TC	8.260
	*P-2623-20	Nipigon	Mar. 30/67	628	4.300
	P-2821-78	MacGregor	Apr. 13/67	17TC	5.080
	P-2821-79	MacGregor	Apr. 20/67	11 & 17TC	5.350
	P-2986-56	Dorion	May 18/67	17TC	4.470
	P-3031-13	Upsala	Apr. 13/67	17TC	6.260
	P-3105-2	Osnaburgh I.R. 63A	Apr. 27/67	599	5.190
	P-3265-12	Gillies	Apr. 13/67	588	6.260
	P-3361-21	Unsurveyed Territory	Apr. 13/67	599	6.400
	P-3361-22	Unsurveyed Territory	Apr. 20/67	599	6.570
	P-3361-23	Unsurveyed Territory	May 4/67	599	7.330
	P-3361-24	Unsurveyed Territory	May 11/67	599	8.670
	P-3361-26	Unsurveyed Territory	May 18/67	599	7.690
	P-3361-27	Unsurveyed Territory	June 1/67	699	10.230
	*P-3444-5	McTavish	Mar. 31/67	587	3.440
	*P-3491-4	Summers	Mar. 30/67	580	4.350
	P-3515-8	Purdom and Booth	Apr. 20/67	585	7.890
	P-3531-4	Ashmore	Apr. 20/67	584	1.010
	P-3546-6	Lybster and Strange	Apr. 20/67	593	0.970
	P-8001-8	Lyon and Stirling	June 8/67	582	4.000
	P-8027-2	Fraleigh and Lismore	Apr. 13/67	593	4.970
	P-8099-1	Conant	Apr. 20/67	599	6.790
	P-8100-1	McCubbin	Apr. 20/67	599	7.410
Victoria	P-3291-4	Verulam	Feb. 29/68	121	0.500
	P-3483-3	Fenelon	Feb. 29/68	121	0.500
Waterloo	P-1549-49	Wilmot	Aug. 3/67	7 & 8	4.616
	P-2882-49	N. Dumfries	Feb. 22/68	97	1.500
Welland	P-1890-45	Wainfleet	May 18/67	3	4.200
	P-1915-87	Stamford	Aug. 3/67	QEW	7.220
	P-2470-38	Willoughby	Nov. 16/67	QEW	7.700
	P-2511-66	Bertie	Nov. 30/67	QEW	7.010
Wentworth	P-1699-93	E. & W. Flamborough	July 27/67	6	11.400
York	P-1960-192	Etobicoke	June 1/67	QEW	0.860
	P-1960-193	Etobicoke	June 15/67	QEW	0.620
	P-1960-194	Etobicoke	July 27/67	QEW	0.195
	P-1960-198	Etobicoke	Aug. 30/67	QEW	0.270
	P-2083-215	Etobicoke	May 18/67	27	0.380
	P-2083-226	Etobicoke	Oct. 5/67	27 & QEW	0.565
	P-2758-88	Vaughan	Dec. 14/67	400	0.440
	P-5052-8	Markham	Jan. 24/68	407	13.200
	P-5053-15	Vaughan	Jan. 24/68	407	10.000

\* Omitted from last year's report

## APPENDIX No. 26

**Schedule of Reversions and Transfers of Sections of the King's Highway and  
Secondary Highway Systems for the Fiscal Year Ending March 31, 1968**

**From Inception of County Road Systems to December 31st, 1967**

COUNTY OR DISTRICT	PLAN No.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Algoma	P-2189-3	City of Sault Ste. Marie	July 29/67	17TC	2.330
Dufferin	P-3226-4	Town of Orangeville	Apr. 15/67	136	0.430
	P-4040-15	E. Garafraxa	Sept. 22/67	136	0.062
Dundas	P-2451-36	Village of Chesterville	July 1/67	43	0.780
Elgin	P-1450-79	Southwold	Sept. 21/67	3	0.160
	P-3159-55	Southwold	May 4/67	401	1.000
Essex	P-1872-26	Colchester S.	Apr. 1/67	18	0.028
Frontenac	P-1876-28	Kennebec	Aug. 26/67	7TC	0.110
Glengarry	P-3178-46	Lancaster	Aug. 26/67	401	10.500
Grey	P-1909-33	Sydenham	May 27/67	26	0.300
Haldimand	P-2797-9	Seneca	July 22/67	6	0.034
Haliburton	P-2386-26	Cardiff	Oct. 5/67	28	0.250
Hastings	P-1561-34	Sidney	Apr. 1/67	2	0.130
	P-1953-39	Village of Frankford	May 13/67	33	0.210
Huron	P-2834-14	Stephen	Apr. 1/67	81	0.640
Kent	P-3252-19	Harwich	Apr. 15/67	98	0.028
	P-3252-20	Harwich	Apr. 15/67	98	0.028
	P-3252-21	Harwich	Apr. 15/67	98	0.038
Lambton	P-2359-21	Village of Wyoming	Aug. 3/67	21	0.740
Middlesex	P-2834-14	McGillivray	(See Huron County)		
	P-2870-24	Adelaide and Caradoc	Apr. 1/67	22	0.076
	P-3163-6	Delaware	May 4/67	401	0.680
Muskoka	P-2781-18	Chaffey	May 27/67	60	0.560
	P-2781-19	Chaffey	May 27/67	60	0.400
	P-7139-12	Medora	June 3/67	118	0.180
Norfolk	P-1864-31	Windham and Woodhouse	May 27/67	3	0.260
Northumber- land	P-2516-53	Percy	Apr. 1/67	45	0.630
	P-3176-66	Brighton	Oct. 28/67	401	0.650
Ontario	P-1601-45	Brock	Oct. 21/67	12	0.170
	P-1605-46	Mara and Thorah	Apr. 1/67	12B	0.850
	P-1605-48	Thorah	Sept. 9/67	12TC	0.335
Parry Sound	P-2441-25	Hagerman	Sept. 2/67	124	0.240
	P-2596-26	Nipissing	Apr. 1/67	534	0.400
Peel	P-1659-90	Toronto	Apr. 1/67	10	0.025
	P-4040-15	Caledon	(See Dufferin County)		
	P-4040-16	Caledon	Oct. 7/67	136	0.080
Peterborough	P-2416-52	Harvey	May 20/67	36	0.700

COUNTY OR DISTRICT	PLAN No.	TOWNSHIP	EFFECTIVE DATE	HWY. No.	MILES
Prince Edward	P-2805-31	Sophiasburg	Aug. 26/67	49	2.190
Renfrew	P-2377-32	Griffith	Sept. 29/67	41	0.620
	P-6023-14	Radcliffe	Oct. 21/67	515	0.370
Simcoe	P-1904-75	Town of Collingwood	Nov. 18/67	26	0.500
Sudbury	P-2132-52	Garson	Oct. 21/67	541	1.000
	P-2210-12	Hallam	Aug. 26/67	17	1.520
Victoria	P-2448-42	Bexley	July 29/67	46	2.150
	P-2448-45	Bexley	Oct. 7/67	46	4.800
	P-2527-67	Eldon and Mariposa	July 22/67	46	0.250
	P-5031-3	Ops.	Sept. 21/67	7B	0.130
Waterloo	P-2882-48	N. Dumfries	Apr. 1/67	97	8.620
Welland	P-1653-35	Humberstone	Sept. 14/67	3	1.200
	P-1907-25	Stamford	Sept. 21/67	8	2.030
Wentworth	P-1790-60	Saltfleet	July 22/67	20	0.680
York	P-2103-40	Vaughan	Aug. 26/67	27	0.060

**CHRONOLOGY**

1967

- February 28—Department of Highways estimates for 1967-68 presented to the Legislature by Hon. George E. Gomme.
- April 10—Contract awarded for the widening of the Queen Elizabeth Way to ten lanes from Royal York Road to east of Highway 27 .
- July 13—Highway Traffic Act amended to permit reduced speed limits through construction areas.
- July 14—Renovations and improvement of the Rainbow bridge plaza buildings completed.
- July 17—Plans for a new freeway, Highway 417, from Ottawa to the Quebec boundary, were announced.
- August 18—North lanes of the Macdonald-Cartier Freeway (Highway 401) from the County Road to Iroquois to 8½ miles east of Morrisburg opened to traffic.
- September 1—Highway 401 — From Highway 2 at Gananoque east to Highway 137 opened for traffic.
- September 1—First section of the Lakehead Expressway opened, from Highway 130 to Highway 11A and 17A.
- September 6—Official opening of the Quinte Skyway.
- September 18—Opening of the Madoc By-Pass.
- November 10—Plans announced for Highway 416, a new four-lane freeway between Ottawa and Highway 401, near Johnstown.
- November 15—Completion of first major contract on the Kitchener-Waterloo Expressway.
- December 20—Opening of the 12 lanes of Highway 401 (Toronto By-Pass) Highway 400 west to Islington Avenue, distance of two miles.
- February 1968 28—Plans announced for proposed route of Highway 402. A 48-mile first-stage section of a new multi-lane freeway between Sarnia and London.

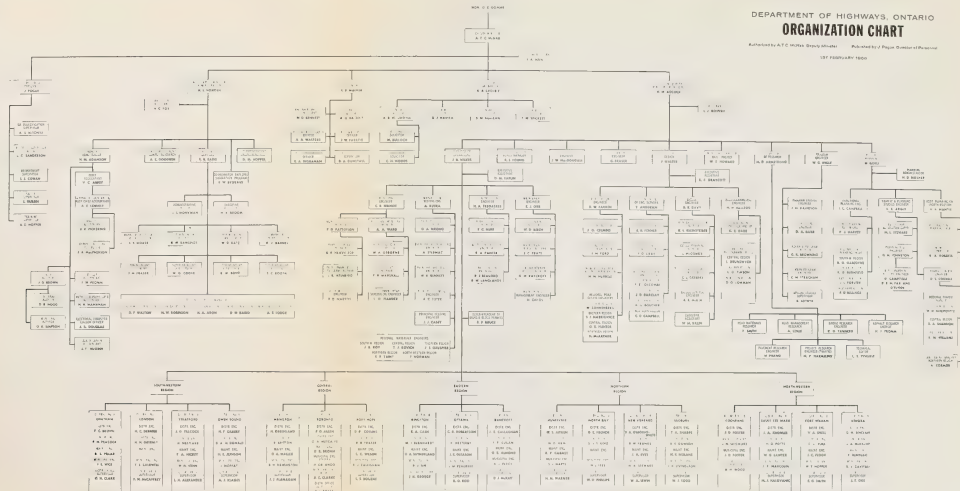




## ORGANIZATION CHART

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